THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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For the Farmers' Cabinet.

New York State Fair and Cattle Show at Poughkeepsie.

HAVING been present at the annual exhibition of the New York State Agricultural Society, held at Poughkeepsie, I take occasion to give you a short description of that very interesting affair, by way of gratifying your readers, who no doubt, have frequently heard of the great fairs and cattle shows of New York; though they may not have had such information as enabled them to form a proper estimate of their utility and greatness. In saying this, I do not mean that what I am about to state, can adequately supply their want of information, for at best, mine will be but a hasty and imperfect sketch—time will only permit me to attempt a mere outline, leaving the readers of the Cabinet to fill it up, as fancy or sense may suggest.

The town of Poughkeepsie, lies half way between the cities of New York and Albany; it can be reached from either of these places by steamboat, in four to five hours. It has a population of some nine to ten thousand inhabitants, and when I say it is a beautiful place, and that the people are intelligent, generous, hospitable and prosperous, I need only remark, by way of proof, that it is situated on the Hudson, or North river, and that it is in the State of New York. Here, then, about a mile from the town, came off the great Fair and Cattle Show of the 18th and 19th of September. The ground was high and well adapted for display, and was enclosed to the extent of some ten acres, with a close board fence, so high as to prevent all ingress but by the gates, through which all were admitted on paying a shilling. A large marquee, said to be capable of accommodating five thousand persons, stood within the enclosure, prominently inviting for shade from the scorching sun, or for rest on the seats, arranged in tiers within. Tents were pitched for the accommodation of the several committees of judges, into which they might retire and consult upon the subject of their decisions and reports. There was also a large business marquee, where the officers of the Society, committee of arrangements, and clerks, could always be found when required. There was also a tent for the gentlemen connected with the press. Then there were the Manufacturers' Lodge, the Farmers' Hall, and the Horticultural Department—these were very large and capacious, well and appropriately filled. The

Horticultural Department surprised me the most, for there I saw the finest pears, peaches and plums, I ever did see, and roots and vegetables superior I think in quality, to any I had ever seen exhibited in this quarter; but what astonished me more, were the size and richness of the grapes, especially the Isabella and the Catawba.

May I say a word as to the ladies who presided in these temples of Pomona and Flora?—no, I dare not, for then might I raise an envious or jealous twinkle, even under the shade of those beautiful lashes that fringe the soft and lustrous eyes of the Quaker girls of Pennsylvania; to say nothing of the dashing belles of Philadelphia; but I must say, rash man that I am, that I should have no objection to see our Pennsylvania fair, and the ladies of the empire State, exhibited in juxta position, with their fruits and flowers; their cheese and butter; and their hose and coverlets, with me for judge.—Phœbus! The scene at Mount Ida would not be a circumstance to such a display; and Paris, but a mere pettifogger to so profound and experienced a functionary, as my honourable self! Well, I must quit this theme, thanking my stars that I have gotten so well over it, for beautiful places, generous hearts, and lovely women, were always among the governing predilections of my fancy, and business and work but a duty, a drudgery, for which I never had any very natural inclination, notwithstanding I am reckoned a working man; but in sooth, that habit did not come of itself—it was not natural, but acquired. Not so the appreciation of all that is beautiful to the eye and enchanting to the heart—this was innate, intuitive, and I shall cease to be myself, when I forget Poughkeepsie, its social and generous inhabitants, its splendid hospitality—and, its *fair*, without which, their splendid Fair would have been to me but a poor affair indeed.

The show of horses was not as good as might have been expected, yet it would have been creditable in many places, elsewhere. The carriage horses were fine; one pair especially struck me as being the best matched, best broke, and most respectable span, I had seen for many a day—they were owned by William A. Davis, Esq., of Poughkeepsie, who with his brother, General Davis, and their amiable ladies, contributed largely to the elegant and generous hospitality that characterised Poughkeepsie during the exhibition.

Of cattle there was quite a large display; the fat cattle were uncommonly fine, and the working oxen remarkable for their docility and training. James S. Wadsworth, ex-president of the Society, exhibited ten yoke, driven to one wagon, a sight in itself, worth a journey to Poughkeepsie; and yet this was matched by Mr. Fuller, of Hyde Park, who turned out a similar number, drawn to a staging on a wagon, wherein were arranged specimens of all the fruits, flowers, grain, roots, and vegetables, of the garden and the field. Mr. Sotham's Hereford cattle were remarkable, at least in this,—there were no other cattle of the *same breed* in the field to compete with them; in that respect they had it all to themselves. They are fine cattle for feeding; I should rank them above the Devons. There were some Ayreshires on the ground, which were creditable specimens of that breed. I was disappointed to find so few Devon cows, where I had expected to find so many; on inquiring the reason, I was informed that the mixed Durham and Devon, and Durham and common cattle, were superseding the Devons fast, as dairy stock. Of these crosses there were several at the exhibition; some of them were highly spoken of.

The show of cattle would have been indifferent indeed, had it not been for the Durhams, which imparted a redeeming character to the whole exhibition. Of these noble animals there was a fine display, especially of bulls. The Durhams were chiefly owned by Messrs. Prentice, Lenox, Sheaff, and Vail; among these herds were several splendid Dairy cows; one especially was conspicuous—she was the property of Mr. Lenox.

The sheep were not numerous, but there were some that would have done credit to any flock, particularly the Leicesters, and the Merinoes exhibited by Mr. Randall. The same remark is applicable to the swine; they were comparatively few, but they were principally very good.

The agricultural implements were varied, and altogether the best collection I ever saw. The ploughing match was conducted with great propriety, and in excellent spirit, as was every thing else, throughout the whole proceedings of this most creditable exhibition. No one who has not witnessed a show and fair by this Society, can form any thing like an adequate idea of their vastness in contributions, expense in arrangements, and the crowds that attend them. It was estimated that from twenty to twenty-five thousand spectators passed through the gates in one day, to the exhibition.

The annual address was delivered by Mr. Bancroft; it was listened to with marked attention—it was of course a highly finished piece of composition. There was but one

defect, and that was natural, and to be expected. It was not sufficiently agricultural for the occasion—however this might be regretted, it showed the orator's good sense, not to attempt to assume the agriculturist, as some have done, who could neither look, nor play the character of a farmer.

But the great moral of these splendid exhibitions is, their influence on the patriotism and prosperity of the State of New York. Here were to be seen highly educated men, of boundless wealth, commingling with the hard-working, every day farmer, cheering him on, and rendering his path less rugged and thorny, by participating, as it were, in his toils, abridging his work, and demonstrating to him the happy results of an improved husbandry. Would that the rich proprietaries of Philadelphia and Pennsylvania in general, had witnessed the scene I have hastily, and but feebly described. It would have taught them a lesson of true wisdom, in this, that whatever promotes the landed interest, enriches them, by enhancing the value of their own property; enabling their tenants, through improved culture, to pay their rents; and the farmers in general to pay the taxes necessary to liquidate our enormous debt. How selfish, and how blind to their own interests are the wealthy, who refuse to contribute to this great end. The subscribing for a few copies of your useful paper, which, if they did not read themselves, they should bestow upon their tenants, or others, or by making a donation to our Agricultural Society, or even the annual contribution of a member, would not only be serviceable in a pecuniary point, but highly beneficial, by way of example. And especially should the State of Pennsylvania *do something* to encourage agriculture, by establishing a State Society, similar to that of New York. It will not do for the commonwealth to say she has no funds. If agriculture is permitted to languish, she never will have funds. The farmers will feel discouraged, refuse, perhaps, to pay taxes, or abandon the lands.

New York gives to her Agricultural Society, some seven to eight thousand dollars annually—there is not one Act of her legislature that illustrates more forcibly her wisdom, than this small gratuity to agriculture. It is now repaying her a thousand fold, as is demonstrated yearly, by the spirited, intelligent, and enterprising gentlemen of the New York State Agricultural Society. Glorious New York! when will Pennsylvania shake off her lethargy and imitate your noble example.

J. G.

Sept. 22rd, 1844.

When, where, and how to get a drove of Sheep.

THERE is something so matter-of-fact and to the point, in the following letter from our friend Solon Robinson, to the *Prairie Farmer*, that we conclude our western friends will hardly fail to be interested in his mode of operating. Many of them are looking towards raising a flock of sheep, and the *when*, *where*, and *how*, are important considerations.—ED.

You state that particular information is wanted as to where a person shall go to buy sheep—when and how to go—the expense—cost of sheep, &c.

The best information I can give is my own experience, and advice founded upon that experience.

The nearest point where sheep can be bought to good advantage, is in some of the central counties of Ohio; distance from Chicago, 300 miles; the route, by La Porte, South Bend, Goshen, and Fort Wayne, Ia., Wiltshire, St. Mary's, Sidney, Urbana, Springfield, &c.; or else from St. Mary's bear more east, through Logan, Union, and Delaware counties of Ohio. Another route is through Michigan, by way of Toledo, into the north-eastern part of Ohio, which will increase the distance and cost of sheep, but generally speaking, give a better quality—that is to say, a finer wool breed; leaving the word *better* for future discussion.

I left home last year the last of August, with one man and a boy twelve years old; I was absent thirty-seven days, and brought in about 800 head of "good common" sheep, that is, an average of about half-blood Merinoes. I bought in Champaign and Clark counties, on the waters of Mad river. The prices varied from 50 to 87½ cents, and averaged upon the 500 which I bought myself, 66¾ cents. The other part of the drove was bought by the man who drove in company with me, and I have not the cost. I sold a part of the wool from this purchase when last in Chicago, at 35¼ cents, and according to that, the average price would have been about 31 cents upon the whole clip. The average weight of the fleeces is two and a half pounds. Drove sheep never yield as much wool the first year as after, especially when poorly wintered. The average cost of my sheep at home, was 81½ cts. each, which includes all the expense of three hands and three horses, going, buying, and extra help at times, and the expense of one additional horse on the return, *except* about a quarter of the total expense out, which was borne by the man in company with me, as his proportion. This average also includes all lost sheep, but does not include my own time. We will therefore add thir-

ty-seven days time of one man and boy, and three horses and wagon, including wear and tear of all the "fixings" at $1 25 a day, $46 25—less than ten cents a head, while the actual cash expense was a fraction over ten cents, but including losses, 14¾; so that it may safely be said, that one can go from Chicago to Ohio, and bring in from 500 to 800 head of sheep, at twenty-five cents a head, and that a good lot will cost less than seventy cents a head.

Now as two very important questions will be asked by every reader who has any notion of buying sheep, I mean to ask them and answer them myself:

First; What is the need of all these horses and wagon? and next, with them and hands, how do you contrive to travel at an expense of less than $1 50 a day?

First, then, when starting for a drove from here, I would have a good light two-horse wagon, a feed trough attached behind; a good tent, made of 30 yards cotton drilling; two buffalo skins, three blankets, one horse-bucket, one do. for drinking-water, one tea-kettle—as men *will* drink coffee, and so will I when on the road where I am obliged to make the water bitter, to destroy a worse taste—one coffee-pot, a pound of ground coffee in a little bag, a frying-pan, a small pot, six round tin plates, three cups, three knives and forks, a little pail for butter, a wooden box for sugar, a few other small fixings in the provision chest, 40 lbs. of bacon, a week's supply of bread, a bag of potatoes, two or three bags of oats, a trunk of necessary clothes—old ones—an axe, an auger, a a little spare rope and a few leather strings—and I am ready for a start. Rain or shine, I would sleep dry and warm in my tent, which is made, when set up, in the shape of the roof of a house, the ridge supported on a pole placed upon two posts about seven feet long, sharpened and stuck into the ground; the bottom is fastened with pins, one gable end closed and the other open towards the fire—cooking my own supper and eating it from a broad board held up on four sticks stuck in the ground, and partaking of all the comforts and conveniences that an "old camper" always knows how to provide.

I would take with me a man and boy, and a saddle and bridle, but no saddle horse, because I could purchase one there for $25 or $30, that would bring $40 at home. In driving sheep, a good dog or horse is very necessary; the average distance should not be over ten miles a day, if yarded at night; or thirteen miles if pastured at night. The expense of the baggage wagon and horses and driver is much less than it would be without them, besides the great convenience of having a wagon along, which enables one to camp wherever wood, water, and feed can be had at night, without being obliged to "push ahead" to a tavern.

Two good drivers can drive from 500 to 800, though three are much better, and sometimes actually necessary.

I find on looking over my memorandum, that I was nine days travelling last summer, before I commenced buying, with three hands and three horses—cash out, $5 61, including horse-shoeing and wagon repairing—all the horse feed purchased, and nearly all the provision taken from home. I spent about a week in buying, and hired an extra hand at a dollar a day, which with the cost of collecting and keeping sheep, &c., is all included, as before stated, in the average expense per head. I was three weeks on the road home—800 sheep, four horses, three hands, and about half the time four hands to board, and the expense for every thing was $35 04, averaging $1 66¾ a day, and grain enormously dear on account of the scarcity occasioned by a great drought. The actual cost of driving 800, averages per head 4⅜ cents, and adding in time of men and horses, not over nine cents a head. The larger the drove, the less average per head expense.

A short piece of advice about keeping, and I have done bleating about sheep. Before you start to buy, be prepared for keeping. Sheds are necessary—but more particularly good "wind-breakers," and dry yards. If situated upon clay prairie, the yard must be made dry by ditching and the use of straw. Sheep are loath to leave the grass in the fall, even after all nutriment is gone from it. Be careful that you do not let them get poor at this season. Put them up, and if they refuse hay, give them sheaf oats; fed in boxes well constructed, there will be no loss. If you keep the sheep fat the first part of the winter there is no danger. Prairie hay does not agree so well with sheep the first winter, and they will need more nursing with grain, turnips, tar, salt, sulphur, copperas, &c.

The best paint for marking sheep is *dry* Venitian red. It combines with the oil of the wool and is indelible. A thief stole twenty-five from me and tried his best to cover up the mark with tar—but it would not do—the guilty blush was there.

Another much neglected thing about keeping sheep must be attended to—that is, poisoning the wolves. A drachm of strychnine—the extract of nux vomica or "dog butter"—costs $1 75, and will make 175

doses. No matter if it kills a few dogs too; they have killed more sheep for me than ever wolves did.

Don't forget to shut up your own bucks from July 1st to November 15th, and make wethers of every other man's that run at large. And above all, don't forget to get the sheep. And don't forget the good advice of your old friend. SOLON ROBINSON.

Lake C. H., Ia., July, 1844.

Cultivation of the Peach.

To the Cincinnati Horticultural Society:—

GENTLEMEN,—I have never yet met with a person who could answer me this question: "Will the pit of the budded peach produce the same fruit as the bud, or as the stock, or a mixture of the two?" That the pit of a seedling peach will produce its kind, is well known, as the Heath Cling has been cultivated exclusively from the pit in Virginia and Kentucky, for the last fifty years. It is a subject of great interest to those who raise peaches for their own use only, as it will enable them to raise their own trees, of the finest fruit, with little trouble, and no expense. I have never found the subject referred to in any Horticultural work. This is most singular, as the peach is constantly raised from the pit, without budding, and will bear in three years. I have never fairly tested the question, but my experience led me to believe that the budded pit produced the same fruit as the original stock. Twenty-five years since I raised as many as 500 or 1000 trees yearly for budding, and the pits were picked up in the garden, where I had none but fine fruit, and almost exclusively such as I got for budded trees. From thirty to fifty trees would yearly lose the bud, and were allowed to produce their own fruit. The fruit, except in a single instance, was small and worthless. Many years since, I saw Mr. Dennis Kelly buying a peck of fine large cling peaches, and he informed me his sole object was to plant the pits. A few years thereafter, he informed me that all the trees proved to be small free stones. But I was not yet satisfied on the subject; and three years since I planted twenty pits, of a fine large yellow free stone, from a tree sent me from the east. One only grew, and it this season bore me fruit of the same kind. But a single tree is not a fair test, and the more so, as it may have been produced from a chance pit in the garden, and not from one planted. I bring forward the subject at this time, with the hope that some of our horticulturists will plant a number of pits of a known budded variety. I should prefer planting the pits as soon as gathered, and not more than one-eighth of an inch under the surface. Pits planted deep, seldom come up. They may for certainty be planted in a clump, and transplanted as soon as they vegetate, or as soon as they are in leaf. I know of no experiment so easily made, that would be of greater public utility, and it is singular that the question was not placed beyond doubt at an early period. I send an Oldmixon free stone peach; this is I believe a peach that has been cultivated near two hundred years. Also a seedling free stone peach, raised in the interior of Kentucky, and sent to me three years since, under the name of Evelina free stone: I deem it one of the best peaches of the season. The present season has not been favourable to it, and those sent are not a fair sample of what it is in favourable years. The Oldmixon is a favourable sample, and one of the best fruits of the season, and by comparing the Evelina with it, its quality can be ascertained. I also send a Bartlet pear—Williams' Bon-cretien. This pear is of good quality, and valuable for its size, but will not bear a comparison with the Washington, or Doyenne, that ripens at the same time. N. LONGWORTH.

August 25th, 1844.

RIPE FRUIT AND DYSENTERY.—There is a pernicious prejudice with which people are too generally imbued—that fruits are injurious in the dysentery—that they produce and increase it. There is not, perhaps, a more false prejudice. Bad fruit, and that which is imperfectly ripened, may occasion colics, and sometimes diarrhœa, but *never* epidemic dysentery. Ripe fruits of all kinds, especially in the summer, are the true preservatives against this malady. The greatest injury they can do, is in dissolving the humors, and particularly the bile, of which they are the true solvents, and occasion a diarrhœa. But even this diarrhœa is a protection against the dysentery. Whenever the dysentery has prevailed, I have eaten less animal food and more fruit, and have never had the slightest attack. I have seen eleven patients in one house; nine were obedient to the direction given, and ate fruit—they recovered. The grandmother, and a child she was most partial to, died. She prescribed for the child burnt *brandy* and oil, powerful aromatics, and forbade the use of fruit. She followed the same course herself, and met the like fate. A minister attacked with dysentery, ate three pounds of red currants between 7 o'clock in the morning and 9 in the evening—next day he was entirely cured.—*Tissot.*

Wheat turning into Cheat, or Bromus.

Editor of the Farmers' Cabinet.—The enclosed communication was read before the Bart Lyceum more than a year ago. Attention was recalled to it by the appearance of an article in the Cabinet some months since, in vindication of the doctrine of wheat turning into cheat; it was therefore directed to be forwarded to the editor of the Cabinet for publication, if deemed worthy of a place in that valuable periodical.

W. L. R.

Bart, Lancaster co., Pa., Ninth mo. 17th, 1844.

As this is the season of harvest, and the state of the weather does not admit of gathering in the grain, I propose devoting a portion of the time to considering an opinion so prevalent in the community, that it may well be doubted if a majority of the people do not entertain it—I mean the opinion that *wheat* produces, or is turned into *cheat*.

This opinion is so firmly fixed in the minds of many, that it is impossible to change, or even to shake it; while others as positively deny it, and are quite as difficult to be convinced. The subject, then, is well worthy of attention, as a question of fact no less than a matter of opinion. If wheat *does* produce, or turn into cheat, all the trouble, labour and expense, which some farmers are at in procuring clean seed, or in cleaning their own, are altogether useless; if it does *not* so change, then will such labour and expense be well rewarded. *Does* it then so change? From reason and from observation—for I have not had an opportunity to test it by experiment—I have come to the conclusion that it does *not* so change, and that there is no good reason for believing that it does. My reasons follow:

If cheat be not regularly produced from its own seed *alone*, it must be a chance production, arising from accidental causes; or a hybrid, bred between two different species, as the mule between the horse and ass. If it be the *latter*,—which is seldom if ever alleged—the produce must be entirely *barren* and unproductive, as hybrids never reproduce or breed. I shall hereafter inquire if this holds good in respect to cheat. If it be a chance production, arising from adventitious causes, it is fair to presume that its appearance and character would vary according to its causes; it would be uncertain, irregular, and not subject to any specific name;—all which is refuted by our daily observation and experience; cheat being as regular and well defined as any other plant.

Wheat and cheat are totally unlike; the stalk, the leaf, the berry, being entirely different. The cheat stalk is generally smaller, and of a different colour, as well as stiffer, harder, and rougher, than that of wheat. The wheat leaf is smooth and naked on its upper surface, while that of cheat is rough and thickly set with stiff bristly hairs. The berry of wheat is borne in a simple spike,—a single head or ear—while the cheat head is divided and subdivided into many parts. It is also destitute of chaff; but has a single husk, which is inseparable from it, like the interior one of oats. It may also be observed, that its whole appearance and habit more resemble oats than wheat; and like the former, its blossom is *always* concealed within the husk, while that of wheat is *never* so concealed.

These characteristics of cheat being, as I have already remarked, regular and unvarying, we find that naturalists have classed and described it as a separate and distinct plant, growing from its own seed and reproducing its own kind. To our winter wheat they give the name of *Triticum Hybernum*; while that applied to cheat, or chess,—as some call it—is *Bromus Secalinus*. Are they mistaken? Are those who have made nature and her handy work their study and delight, less likely to perceive the truth than others, who from habit and occupation are unable to devote much of their time and attention to the subject? I am unwilling to believe it; for if so, study and education are worse than useless—a perfect waste of that precious time which might be much better employed in the common avocations of life.

But there is *much more* that goes to prove the same thing. The two are *never seen* growing from the same stalk—the same root or stool *never* produces both, as evidently *might* be, if we admit the possibility of a change. A man once thought he had found both growing on one stalk; but when it came to be examined, it was found that a branch from a cheat head had become entangled among the grains of the wheat and broken off from its parent stem, without being united to the other. In another case, a person—with whom I was acquainted, by the way—found both growing together, and apparently from the same root. He carried them to a friend, who denied their common origin, and with an air of triumph, exhibited his proof. "But," said he to me, "my friend was wiser than I. He agitated the root in water, and it naturally separated into two, one of which was wheat, and the other cheat." I have myself seen hickory and oak, poplar and maple, as well as other dis-

tinct kinds of trees growing together, their roots and bases so united and grown into each other, that it was altogether impossible to separate them; yet who would say that a hickory nut produced an oak, or an acorn a hickory! or that a poplar and a maple sprang from the same seed! I will not write the word by which the world would designate the man who should make such an assertion. Another person, also known to the writer of this, was very particular in selecting and cleaning his seed. I give the result in his own words: "For thirty years I have not had a stalk of cheat on my premises." My own observation goes to show that the more attention is devoted to obtaining clean seed, the less cheat will be found in the crop; while a contrary result follows uniformly from an opposite course. Is more required? I am able to give yet more; for I have seen cheat growing profusely where no wheat had been sown since the memory of man, if indeed it had ever been.

I have never heard it contended that other grain, or any other plant, is turned into cheat, except wheat alone; yet have I seen it growing among all other kinds of grain, in fields of Indian corn, and bearing a conspicuous part in crops of grass, where little or no other grain was to be seen. In what way will the advocates of change account for this? To solve the difficulty, some admit the growth of cheat from its own seed, an admission fatal to their theory, as I conceive; while others, in accordance with the nature of hybrids and chance productions, deny its growth thus, and offer no explanation whatever. But with an air of triumph they point us to the larger proportion of cheat in places where the wheat has failed from any cause, and ask us why is this? The same thing, however, may be seen in other grains. Do these likewise change into the same identical cheat? Impossible: it is not contended for, nor even hinted. Here, then, is the old difficulty; a difficulty altogether inexplicable by the theory of change, but very easily explained on other principles, which I proceed to notice.

Cheat is, as I have said, a separate and distinct species of plant, having the peculiar characteristics already noticed. This plant is particularly hardy, not being affected by those causes which often produce a failure in other kinds of grain. This will satisfactorily account for the prevalence of cheat in places where wheat has been destroyed by wet, or by the winter. The same thing may be observed where the seed of wheat, or other grain has been picked up by the birds, or cropped off after it has come up. The wheat was picked up while the cheat was left to grow; or both being cropped off, the wheat was killed, and the cheat being more hardy, and withal a little later in its season, sprouts up, grows again, and produces seed. Another reason of this apparent prevalence may be found in the fact—which does not seem to be generally noticed—that cheat produces twice the seed that wheat does, and more than any other grain with which I am acquainted. It was but a day or two ago, that I counted on a small head of cheat, not less than one hundred and twenty grains; while fifty or sixty grains are allowed to make a good head of wheat, and the very largest that ever fell under my observation, yielded only one hundred and five. Oats seldom reach one hundred and twenty, though the most prolific of all our cultivated grains. What number of grains a large head of cheat would yield, I am unable to say.

I have already given facts to sustain my opinion that cheat is only produced from its own seed:—it may not be amiss to say in addition, that different individuals have sown it, and it has always reproduced its kind. An experiment might be tried as follows: in a garden plot, or other suitable place, plant—not sow—a certain number of grains of wheat in such regular form, and at such regular distances, that it may be readily known if any of them fail to grow, or change into something else. If this be fairly done, I dare venture to say that no cheat will be found where wheat was planted; and if cheat be found in the plot at all, it will be irregularly, and from seed contained in the manure, or previously lying in the ground. All irregularity or uncertainty in conducting the experiment, would be fatal to the result. The number of seeds and the precise spot of their deposit must be known, or nothing definite will be ascertained. Vary the experiment by substituting cheat grains for some of the grains of wheat, and the result will show a stalk—or rather a root producing several stalks—of cheat for each grain of cheat planted, and the same in respect to the wheat. Some grains may not grow, but these will be readily known, and if more should spring up than were planted, it will only prove that more seed was supplied from some other source. The intelligent experimenter will perceive other methods of arriving at certainty in the matter, and I am persuaded they will all result alike.

That cheat will grow, also accounts for the fact adverted to above, of cheat growing profusely in grass fields. Four years ago last spring, it was my lot to observe a field of this kind. I thought it

really grass, though of what sort I was unable to say, and it was intermixed with a small proportion of clover, of which there was no doubt. The observations of passers by were such as these: "What noble grass!" "What fine timothy!" No one thought it wheat; there was no wheat amongst it, and none perceived the resemblance. But lo, and behold, when it came to shoot into head, what was it? Every one could see, and there was no longer room for doubt. It was cheat! really nothing but cheat! The "noble grass," the "fine timothy,"—three-fourths of the produce of that field were turned into cheat! Yes, actually changed from its proper nature, and converted into that mongrel cheat! From the owner of the field, I learned that it had been in wheat the year before, and—to use his own expression—"it was more than half cheat." Here, then, was a complete solution of the mystery. No supernatural change had taken place, no mongrel was produced; but the grain crop being "more than half cheat," had left seed enough on the ground to furnish a tolerable crop of hay, principally cheat thus reproduced.

Is it possible to resist the conclusion that cheat grows only from its own seed, and is never otherwise produced? But in order to give the advocates of the changing theory a fair chance, I lay down the six following principles; either of which being disproved, I shall be constrained to acknowledge that I have been in error *partially*, and may be wholly so.

1. Cheat and wheat *never* grow on the *same* stalk.

2. They *never* grow from the *same* root or stool.

3. Hybrids, or mixed species, *do not* propagate.

4. Chance productions are variable, having no fixed laws.

5. Cheat seldom fails to grow, and *always* produces after its kind.

6. Cheat *never* turns to wheat.

Till one or more of the above propositions shall be proved false, *I will* and *must* contend, that wheat *does not* and *cannot* turn to cheat. Agricola Non.

Pleasant Mount, July 10th, 1843.

Electricity.

It appears that according to Wheatstone's experiments, electricity travels at the enormous velocity of 288,000 miles in a second. A note about this velocity, and also relating to the motion of light, which is similarly rapid, shall be cited in order to exalt, if possible, the conceptions, and to point attention to the marvels with which the material world teems.

Light is about eight minutes thirteen seconds in passing from the sun to the earth, so that it may be considered as moving at the rate of one hundred and ninety thousand miles in a second, performing the tour of the world in about the same time that it requires to wink with our eye-lids, and in much less than a swift runner occupies in taking a single stride. * * * * * Such is the velocity of light, that a flash of it from the sun would be seen in a little more than eight minutes from its emission; whereas the sound evolved at the same time—supposing a medium like air capable of conveying sound between the sun and earth—would not reach us in less than fourteen years and thirty-seven days; and a cannon ball proceeding with its greatest speed, in not less than twenty years. The velocity of electricity is so great, that the most rapid motion that can be produced by art, appears to be actual rest when compared with it. A wheel revolving with a rapidity snfficient to render its spokes invisible, when illuminated by a flash of lightning, is seen for an instant with all its spokes distinct, as if it were in a state of absolute repose; because however rapid the rotation may be, the light has come and already ceased before the wheel has had time to turn through a sensible space: the following beautiful experiment was made by Wheatstone: A circular piece of pasteboard was divided into three sections, one of which was painted blue, another yellow, and a third red; on causing the disc to revolve rapidly, it appeared white, because a sunbeam consists of a mixture of these colours, and the rapidity of the motion caused the distinction of colours to be lost to the eye: but the instant the pasteboard was illuminated by the electric spark, it seemed to stand still, and each colour was as distinct as if the disc were at rest.

From what is said of the physiological effects of common electricity, we extract the following paragraphs:

It is stated by Mr. Morgan, that if a strong shock be passed through the diaphragm, the sudden contraction of the muscles of respiration will act so violently on the air of the lungs, as to occasion a loud and involuntary shout, but that a small charge occasions in the gravest persons a violent fit of laughter: persons of great nervous sensibility are affected much more readily than others.

A small charge sent through the spine instantly deprives the person for a moment of all muscular power, and he generally falls to the ground. If the charge be very powerful, instant death is occasioned. Mr.

Singer states that a charge passed through the head, gave him the sensation of a violent and unusual blow, which was followed by a transient loss of memory and indistinctness of vision. A small charge sent through the head of a bird will so far derange the optic nerve as to produce permanent blindness; and a coated surface of thirty square inches of glass will exhaust the whole nervous system to such a degree as to cause immediate death. Animals the most tenacious of life, are destroyed by energetic shocks passed through the body. Van Marum found that eels are irrecoverably deprived of life when a shock is sent through their whole body; when only a part of the body is included in the circuit, the destruction is confined to that individual part, while the rest retains the power of motion.

The bodies of animals killed by lightning, are found to undergo rapid putrefaction; and it is a remarkable circumstance, that after death the blood does not coagulate.—*Temperance Advocate.*

From the Public Ledger.

Management of Fruit Trees.

We give below the account of R. L. Pell, Ulster county, New York, which took a gold medal, being a premium offered by the American Institute for the best fruit farm. It appears Mr. Pell has had in view the market of Europe, by launching into one article of fruit, the Newton pippin, that cannot be competed with for profit in that market. He has also kept in view the market of his own State in other fruits, for which he has been awarded the premium as above.

To the Committee on Fruit Farms:—

Gentlemen,—Being desirous to compete for the premium to be awarded by the American Institute at its sixteenth Annual Fair, for the best fruit farm in the State, I now abide its rules, and offer, at the request of Mr. T. B. W., its worthy and very useful secretary, my mode of managing.

For some years I have been experimenting upon the apple tree, having an orchard of 20,000 Newton pippin apple trees; I have found it very unprofitable to wait for what is termed the bearing year, and consequently it has been my study to assist nature, so as to enable the trees to bear every year; I have noticed that it bears more profusely than any other tree, and consequently requires the intermediate year to recover itself, by extracting from the atmosphere and earth the requisites to enable it to produce. If unassisted by art, the intervening year must be necessarily lost. If, however, it is supplied with the proper sustenance, it will bear every year. Three years ago, in April, I scraped all the rough bark off a few of the apple trees in my orchard, and washed the trunks and limbs within reach with soft soap, trimmed out all the branches that crossed each other early in June, and painted the wounded part with white lead, to keep out the moisture, then split open the bark by running a sharp pointed knife from the ground to the first set of limbs, in the latter part of the same month, which prevents the tree from becoming bark bound, and gives the inner wood an opportunity of expanding. In July I placed one peck of oyster shell lime around each tree, and left it piled about the trunk until November, when I dug the lime in thoroughly. The following year I collected from those trees 1,700 barrels of fruit, some of which was sold in New York for $4, and the balance in London for $9 per barrel. Strange as it may appear, they are literally bending to the ground with the finest fruit I ever saw, a specimen of which is before you. The other trees in my orchard, not treated as above, are barren, next year being their bearing year.

Robert L. Pell.

Ulster co, New York, Oct. 8th, 1843.

Guano.—Contracts for Ichaboe (African) guano have been signed, to be delivered from March to the middle of May, 1845, at £6 6*s.* per ton, at Liverpool. The last news from the island of Ichaboe was, that one hundred ships were then waiting their turn to load. It is thought by some that in twelve months the stock of guano on Ichaboe island will be exhausted; but it is said there are other islands equally valuable. If that was the case, why should so many ships wait so patiently their turn to be laden? The supply of African guano here—Liverpool—is very liberal. It is calculated by many importers that guano will be bought on better terms the next three months, than will happen again for years; for the number of ships on their passage to load at Ichaboe, and those returning laden, will overstock the market, as the season will be over before they can arrive.—*London Ag. Gazette.*

Ventilation and cleanliness are very important helps to economy in the feeding of all animals. Shelter and warmth will do harm, if free and pure air is not admitted to the fattening stock. The same is true of cleanliness, so favourable to the health of all animals. The cleaner their houses and skins are kept, the more they thrive under any given form of treatment in other respects.—*Johnston.*

For the Farmers' Cabinet.

The Gad Fly—Sheep-nose Worms.

To the Editor,—I take the liberty of calling your attention, or some of your correspondents, "to the *œstrus bovis*, a species of gad fly, that is said to deposit its eggs in the noses of sheep, which is hatched by the warmth of the breath of the sheep, passes up into the nostrils, and there remains until it has acquired its growth; it then leaves its old habitation, and falling to the earth, buries itself therein, until it becomes a fly." Having lost a great many sheep at different times by this insect, as I suppose, my attention was called more particularly to it in 1843, when I sustained a loss of about one-tenth of my flock; they began to die in February, and continued to die throughout the month of March. Of the last which died, I had the head opened, and took out of the upper regions of the nose about thirty worms of various sizes, some of them encircled by dark coloured, rough rings; from which appearance I supposed that they had arrived at full age, and were ready to take their departure; while others appeared young and tender, and not more than a quarter of an inch in length, and about two-thirds of the same in thickness; there was also an intermediate size, from three-quarters to an inch in length. I was for some time at a loss to account for the great difference in the appearance of these worms, but finally concluded that it must be ascribed to their being deposited at different times: i. e., that the oldest worms are the deposits of 1840, the next of 1841, and the youngest of 1842, so that the oldest required two and a half years to attain their full age. I think that I am supported in this opinion by the circumstance that I have never lost a yearling or one under two years of age, and when I have found worms in the heads of young sheep, they seemed to be of a size and appearance corresponding to the age of the sheep.

I am inclined to the opinion that the fly is not general through the country, but is mostly to be found in certain districts, and where there have been large importations of foreign sheep. The small number of sheep slaughtered in the country for the use of a private family, will not furnish a sufficient supply for the investigation of this subject; but in a city like Philadelphia, a person can at all times have recourse to the butcher's stall, where he can examine the heads of sheep of all ages, and test the correctness of my hypothesis on this subject.

I will notice a prevalent opinion, here, as well as elsewhere—that is, that when the sheep crowd together in hot weather, keep their noses down and stamp the ground, that they are trying to avoid the gad fly; but I am of a different opinion, I believe they are endeavouring to defend themselves from the attack of the stable fly, whose bite is very severe, and which is a tormentor of our stock of all kinds. I would rather suppose that the *œstrus bovis* prefers the evening, when the flock has retired to rest, or during the night season, for depositing its eggs—to scuffling in mid-day to accomplish its object. In Rees' Encyclopedia, under the article upon sheep, you find the term *sheep-nose worms*, where the *œstrus bovis* in the fly state, is described as being of a very lazy disposition, and not liking to make any use either of its legs or wings: the duration of its life in the fly state is said to be about two months. For a further account of the effect of worms in the heads of sheep, I will refer you to an article published in the 12th vol. of the American Farmer, page 39, by R. K. Meade, of Frederick county, Virginia.

An Octogenarian.

September, 1844.

The above is inserted without our knowing whence it comes. It would have been a satisfaction to the editor, as well as his readers, to be able to locate the depredations referred to by our correspondent.—Ed.

For the Farmers' Cabinet.

Agriculture and its Improvements.

To the Editor,—There is so much good sense in the following extract of a letter from Alexander Walsh, Esq., that I feel quite inclined to forward it for insertion in the Cabinet. I find it in the British American Cultivator, published at Toronto, Canada—it is there credited to the New York Mechanic and Farmer, where I suppose it originally appeared. The ideas thrown out in relation to changing seed, are practically good; potatoes are particularly benefitted, not only by a change of the tuber from place to place, but also by propagation from the seed. In relation to irrigation, mentioned in the letter below, I believe we pay by far too little attention to it. The value of agricultural papers is in bringing these matters frequently to view, and stirring us up to more care in our modes of management.

T. N.

"Of all civil occupations, that of agriculture should be regarded as foremost: it is the most indispensable, the best preserver of health, of morality, of virtue, and of religion. It was the occupation of our first parent, and has been that of a majority of

his descendants in all past ages, and must necessarily so continue to time's end. How largely are we interested in its improvement and success! It is, however, a painful truth, that its progress in our country is far from being exhilarating. Habits, venerated only for antiquity, are obstinately adhered to, to the exclusion of "book-farming," and this without any investigation into relative merits; numerous are the deformities growing out of this error; slovenly managed farms—not arising from idleness—for idleness is not the besetting sin of the tillers of our soil; farms disproportionate to the means of proper cultivation; fields rendered unproductive by a succession of wasting crops, and then left to be resuscitated by the slow operation of nature. To these might be added many other equally obvious defects, too numerous for present detail.

"It is passing strange, that while the aid of the press is consulted in support of every design, even those of minor importance, or of doubtful policy, agriculture, the most important of all, seems alone to reject its influence; this unhappy prejudice is gradually yielding to better judgment, and we may hope the day is not distant when the farmer will be no more without his agricultural magazine, than he would without his almanac.

"There are certain primary principles so evident as to be within the unaided observation of every tiller of the soil, yet even these often require a friendly monitor to keep them present to the mind: others there are, dependent on scientific research, and seldom to be discovered except by the studious reader. The press, in these cases, is the best monitor and the truest instructor. In truth, the few shillings annually charged for an agricultural journal, if properly attended to, are the most productive outlay of the farmer.

"The proper selection of seed grain is an important consideration. The best if possible, should alone be used. Grain is liable to degenerate by long succession of unchanged seed. An occasional change of seed for that of other farmers, will often be found beneficial, insomuch that even that received in exchange, will, although of an inferior quality, frequently yield a produce superior to that given in exchange, especially if the latter has exhibited any symptom of degeneracy. The potatoe is a very necessary and valuable esculent; there is perhaps no vegetable more liable to degenerate by a continued succession of the same stock in the same soil: were it not for the friendly agency of nature, which annually scatters its seed on the ground, and thus gives birth to a new generation, this necessary article of food might be entirely lost. This effort of nature never fails in mild climates, but should not be relied on where the rigorous cold of our northern winter seldom fails to destroy delicate seeds when exposed to its action. An exchange of seed potatoes with a neighbouring farmer, will generally check the menaced evil, but the true mode is to imitate nature; the farmer should every two or three years preserve a small quantity of the seed which is contained in the balls growing on the green tops or stalks of the potatoes, and sow the same in a bed in his garden; the plants when they appear over ground, should be transplanted, and placed at the usual proper distance. The produce of the first year's growth, generally of a size too small for use, may be reserved for the next year's planting. This is deemed an infallible remedy against degeneracy, and gives the best security for good and wholesome crops, in regard to abundance and quantity.

"The improvement of his breed of cattle, is an object of the greatest solicitude to every farmer. He does not always know how much is directly in his power, in regard to this object. This secret, if it be one, consists, in no small degree, in a plentiful supply of food to the young animal; the full grown beast will eat less and fatten sooner, than were he neglected while young. An early attention to abundant feeding, will improve the humblest stock of cattle, while the best breed, if neglected, or not sufficiently fed while young, will degenerate and become in their maturity unsightly and profitless.

"Irrigation of land, is a practice of great antiquity. History does not, I believe, any where notice it as a modern invention. Virgil, the son of an Italian farmer, who wrote before the Christian era, states that it was practised in his country. Irrigation, when not attended with too much expense, is a valuable fertilizer of the soil. All kinds of vegetation are benefited by a skilful application of it. Meadows subjected to its action, will yield double the usual quantity of grass, and may be mowed twice in a year. Grass thus nurtured, will not, although artificial, wear out, but may, by this treatment, be preserved permanently.

"The overflow of the river Nile, is a display of irrigation on a magnificent scale; on the subsiding of its waters, the agriculturist almost without an effort, raises an abundant crop. Egyptian grain has, by reason of its quality and abundance, become proverbial. Lands adjoining rivers, or streams of water, where the overflows

are periodical or occasional, and not too frequent, produce results proportionally similar to those of the Nile. I have seen no calculation made with a view to ascertain the utmost amount of money, or of labour as the equivalent of money, which a farmer may safely expend in the irrigation of his lands. I incline to the opinion that the outlay may profitably exceed the general apprehension. The watering of the kitchen garden is deemed by the horticulturist indispensable; the labour is generally performed by hand and watering pot, the most expensive of all modes in use; yet, I believe that, on a minute calculation, it would appear that no equal extent of the farm yields so large, or, all matters considered, returns so large a per centage on the capital employed. This, if true, goes far to prove that small farms, well cultivated and irrigated, even at considerable expense, are more productive of profit than large farms without the means of a thorough cultivation, and depending on casual falls of rain for the necessary moisture.

"All lands at all worthy of cultivation, contain the means of retaining them perpetually in a state of continual productiveness. Ignorance or prejudice alone, would permit any part of the farm to be fallow. Compost is the common production of every farm, and is not the least valuable resuscitator of exhausted soils; it is usefully applicable to every soil, increasing in every instance the quantity of the crop. How strange that this valuable auxiliary to agriculture should be disregarded and left scattered about the farm yard to be trodden by man and beast, and thus rendered almost useless."

Dr. Beekman's Address.

Delivered at the Fair of the Dutchess Co. Agricultural Society, at Washington Hollow, N. Y., on the 13th ult.

We make the following extracts from Dr Beekman's Address, believing that they may be profitably pondered by us of the Keystone, as well as our brethren of the Empire State. The average yield of wheat is said to have very much lessened in many parts of New York, and though we are not prepared to say this is also the case with us, there is but one way to prevent the discouraging result—that is to nurse our lands, and return to them more than we deprive them of. Indeed wheat in this vicinity has become one of our expensive, precarious, and poorly remunerating crops. With our land worth from fifty to one hundred dollars an acre, though deprived of much of its virgin fertility, we can scarcely compete with the cheap, yet deep rich lands of the West. Nevertheless, when we do grow wheat, let us by good management and thorough cultivation, endeavour to make our average as near to the Doctor's forty bushels as possible.—Ed.

Dutchess has for many years stood high as a well cultivated county. No doubt the praise is merited; but tell me where is the intelligent farmer whose land is not susceptible of being made better? Where is the farm that will average forty bushels of wheat to the acre, and so proportionably its other products? Now can any one doubt that this may be done? That it has been done elsewhere, we have the most abundant proof. Will you acknowledge that the land elsewhere is so much better naturally than yours, that you do not raise half that amount? No, I know you will not make such an admission. To what then is it owing? There can be only one answer, and that is imperfect cultivation. The time has been when forty bushels of wheat to the acre, have been repeatedly raised in Dutchess; but that time has for the present gone by, whether it will return or not, will depend upon your own industry and intelligence. That it will return I have no doubt; for I have the confidence to believe that your desire for agricultural distinction will induce you to adopt a more systematic and intelligent course of husbandry.

When the forest was opened to the plough, you had the accumulated decomposed vegetable matter of centuries to enrich your soil, which made it immensely productive: but drawing too long and too often upon that store house, you have in a great measure emptied it of its treasures, and now you have no resource left but to draw upon your own management and skill. I have no hesitation in saying that you will be equal to the occasion, and that the lost fertility of this county will in process of time be more than restored. But it cannot be by farming as our fathers have done; it will be by becoming better acquainted with the nature of our soils—with the food most congenial to the plants we wish to cultivate, and applying to that soil whatever may be deficient to assist the full developements of its capabilities.

Depend upon it, the great defect of our farming is the scanty return we make to the soil that we crop so closely; and when you complain of poor returns for your labour, at least in the quantity gathered, it is upon the principle that you are willing to work your horse but not to feed him. Until therefore we feed with a more liberal hand, we shall not be more liberally rewarded. If I compare our farming, however, with what it was twenty years ago, I see a decided improvement; better houses, better barns, better fences; better, that is cleaner fields,

better crops, and stock essentially improved. With all these man improves. But there is a vast deal yet to be done, and we must not talk of good farming until we can in all things double, and in many treble our present product; for, let me tell you the productive powers of the earth are almost illimitable.

I commenced this Address by propounding the query—Where is the farm that will now upon the average yield forty bushels of wheat to the acre? If in this assemblage there is one individual who owns that farm, and he realizes, positively realizes that result, I will here stop and respectfully ask him to give us the benefit of his practice and intelligence. No one speaks. If not forty, then thirty; if not thirty, then twenty. With less I cannot be content, because with less, although it would be an improvement, it would not be so decided as that the man's experience would be an essential benefit. They have raised seventy bushels, eighty bushels of wheat to the acre in England; and shall we, the freemen of America, who own the soil and its improvements, be content with less than twenty? No, I will raise the standard higher. It must be doubled, and let no farmer stop until he comes up to the average of forty. We cannot accomplish great things if we do not attempt them, and success is only to be won by effort. Between sixty-eight and sixty-nine bushels of wheat to the acre have been raised in the town of Wheatland, as stated by Gen. Harmon, of Genesee. This is a proof that it may be done here, because it has been done in this State, and if in that portion of it why not in this?

Wheat was originally a wild plant, the kernel much smaller than it is now, and we hear of it first in the East. But we know nothing definite as to the era in which it first appeared, the country that produced it, nor at what time it was first used as the food of man. Its growth is almost co-extensive with the world; and whether sown under the tropics or in northern latitudes it always matures, and always furnishes the same valuable and nutritious food. Valuable as it is in its nutritive powers, that value is very much enhanced from its universality, for it will thrive in all climes, and man can avail himself of it in all places. It is so well adapted to his support, that bread made from it is justly termed "the staff of life." A plant that is so useful both as an article of food and as a means of commerce, surely ought to draw our most careful attention to its successful cultivation. It is a hardy plant; what it wants is a rich, clean soil, well pulverized, and to be sown in season.

The History of Guano, from Dr. Gardner's Essay.

Among the many surprising discoveries of the Spanish adventurers in America, that of islands formed of the excrement of birds was not the least. The fertilizing power of this new manure, evoking the most extraordinary growth from barren sand, in a climate unvisited by rains, was so worthy of attention, that the earlier writers are full in their accounts of the guano, and speculations on its origin. The Indians knew that it was the excrement of the flammands, cormorants, cranes, and other piscivorous birds that darken the air of their coast. They calculated the supply of manure, and fixed seasons for its removal. The birds were to them providors of food, for their sands could yield none; and hence they looked upon them with so great a reverence, that human life itself was scarcely equal to that of these birds. They called the deposit *huana*, or dung for manuring, and formed from it the verb huanuchani, to manure. But the Spaniards were not equally satisfied of its origin; they had no hesitation in referring the white, recent excrement, to birds; but the dark brown fetid *guano* seemed to be altogether another substance.

Ulloa says—when the depth is considered at which the guano is dug, it appears probable that it is an earth, although the smell might be considered against this opinion; and he is inclined to suppose that a considerable portion of earth is mixed with the birds' dung. Frezier, who examined the coast in the last century, and visited the island of Iquique, (Voy. dans la Mer. Sud.) tells us that Indians and negroes are engaged in collecting guano, which is a yellow earth, believed to be the dung of birds from its smell, and the occurrence of feathers at a great depth; but he is overcome with difficulty to account for such accumulations, since, for upwards of one hundred years, there were loaded annually ten to twelve ships, and without any great diminution in its height.

It was, perhaps, this doubt as to the nature of the manure, that led the Spaniards to neglect the wholesome provision of the Incas in respect to the birds, so that now the bustle of ships and boats has driven them away. The discovery of large stores in the earth, under layers of sand, and sometimes clay, seemed to remove the necessity for new deposits; and the recent article, which, in remote times, was almost exclusively used and gathered from the several islands to the extent of 20 to 25 tons the season, is now only procured from such collections as were overlooked by them, or unnecessary to their culture, and will be soon exhausted.

The accumulation of recent excrement is extremely slow. "Experience seems to prove," says Humboldt, "that one island will scarcely produce a ship load in a great number of years."

Several of the older deposits, under sand, were also worked by the Indians. The islands of Iquique, St. Lobos, Isla di Guana near Arica, are mentioned by the first writers.

We owe most of our information of the present condition and extent of these deposits to Humboldt and Mr. Winterfeldt, who resided in Peru for a number of years, and published an account in Bell's Weekly Messenger, September 11th, 1841.

Humboldt estimated the range of guano islets from 13° to 21° south latitude—but it certainly extends beyond these limits, for the island of Lobos is as far north as 6° south latitude, and Mr. Bartlett, recently from Peru, states that they extend to the 25th degree south.

The following islands and ports are best known as furnishing the manure:

Iquique, lat. 20° 20′ south, near the port of Iquique, has been wrought from time immemorial, and is beginning to be exhausted, according to Mr. Winterfeldt.

At Pabellon de Pica, from the hill of Pica, large quantities are obtained, this bed being a mile in length and extremely deep—it is even said 800 to 900 feet. The deposit was covered with a considerable accumulation of drift sand.

From St. Lobos island, three leagues south of Pica.

At the island of Torrecella.

At the port of Islay, from the islands of Islay and Jesus, which formerly yielded upwards of twenty tons of recent guano, but whence the birds have been driven by the opening of the port.

At the port of Mollendo, large quantities are sold for the province of Arequipa, where it is extensively used for maize and other crops. In the adjoining province of Tarapaca, it is also used in even larger quantities as a manure for wheat, maize, fruit trees, and indeed every crop except sugar. (Winterfeldt.)

The Chincha islands, lying about fifteen miles from the port of Pisco, in lat 14° 23′ south, longitude 76° 1′ Greenwich, furnish immense supplies. One of these possesses an excellent harbour, so that ships can be warped sufficiently close to the land to take on a cargo through a canvass hose, or any similar contrivance. The deposit is estimated at 300 feet deep, and the island half a mile in diameter, with a high hill in the centre. There are three islets—the most favourable is the middle.

The islands about the port of Arica, lat. 18° 26′ south, longitude 70° 16′ West Greenwich, have also been wrought for a long time, and abound in excellent guano.

The islands of Ila and Iza are mentioned by Humboldt.

Nearly from Coquimbo to Guayaquil, the shore is barren, only here and there presenting fertile valleys where a stream descends from the mountains, as at Arica and Coquimbo, where an abundance of wheat is raised, and at Quillota and Lambaryèque, where even forests exist. The country near Lima, is moister from the proximity of the Andes and the heavy mists called *garrua*. But excepting the valleys, extensive deserts of sand, with naked rocks, are met for 1600 miles. From Coquimbo to Copiapo, 300 miles, not a village exists: then the traveller crosses the wastes of Atacama, and to the north of Truxillo occur those of Picera and Séchura. Along the coast, on islands stretching to the sea, on headlands, and uninhabited points, buried under many feet of sand, it is probable immense deposits exist which have never been opened, but which the enterprise of the Peruvian company will discover.

The amount drawn for the supply of the district of Arequipa only, is stated by Mr. Winterfeldt at 600 to 700 tons. Tarapaca requires more. The lands about Arica and all along the coast are extensively manured with it; hence many surmise that the guano will be rapidly exhausted, but it is probable that only a few islands are yet known, for they extend to upwards of fifteen miles from the coast. The beds of manure are usually under sand or drift, and reach various depths, from a few feet to 900 feet, according to some captains. In superficial dimensions they are equally various, from a few hundred feet to upwards of a mile and a half.

The success attendant on the importation of guano into England, gave rise to a mercantile speculation on the part of a company, who have secured from the Peruvian and Bolivian government a monopoly in the sale of the manure, for which they are said to have paid $1,000,000; moreover there is a duty of £3 the ton levied on the export.

The recent excrement is not an article of export, but that which is red or brown. It usually exhales an ammoniacal odour, which sometimes, after heavy dews, becomes intolerably offensive. It is said that at Arica the smell from the neighbouring guano islands is sometimes so great as to keep off shipping—and an epidemic is even attributed to it: notwithstanding, the crews of vessels engaged in transporting it are robust and healthy.

It is well understood that the manure is found only along those portions of the coast that are continually dry, and where rain scarcely ever falls. On all coasts similarly situated, the manure will be found; but beyond, even although the birds may be as abundant, no true guano can be expected, but only the insoluble parts.

The coast of Peru is admirably situated, being the boundary of an interminable sweep of the Pacific Ocean, as a resting place for sea-birds, where they may form their nests and raise their young; but under these circumstances they are intolerant of any interruption, and leave the islands as soon as an excavation is made for manure.—*New York Farmer and Mechanic.*

The boiling or steaming of dry food, and even of potatoes and turnips, is recommended by many as an economical practice. Professor Johnston believes the general result of the numerous experiments which have been made upon this subject in various parts of England, is in favor of this opinion in so far as regards fattening and growing stock. It seems a more doubtful practice in the case of horses which are intended for heavy and especially for fast work—though Stephens in his *Book of the Farm*, says that even for these animals, the use of steamed food is coming into use with extensive coach contractors.

Productive Farms.

To a person not familiarly acquainted with the history and statistics of English husbandry, the extreme productiveness of the farms of that country will appear incredible. Nearly nine-tenths of the cultivated lands in Great Britain and Ireland, are rented to tenants, who pay, usually, from four to five pounds sterling per acre, annual rent. Where is the farmer in this country, who could live under such a burden! Here a farm comprising a hundred acres, is often rented for one hundred dollars, and even at this rate the tenant has a hard task. The cultivation, even where there are a large number of acres in grass, will little more than pay the rent and taxes; but in England the result is widely different. The tenant who there pays £5 per acre annual rent, and finds all appliances, obtains not only a comfortable living, but in many cases wealth, from the prosecution of a business which here, with like burdens, would doom him to want and misery.

In 1811, Irwin estimated the produce of one English farm of eight hundred and ninety acres, at £8,578, or $38,000! The quantity of manure applied was 13,746 one-horse cartloads in one year, and 10,250 the next! Now admitting the rent of this farm to be $12 per acre, and the cost of manure and its application $12 more; and if to this sum we add, for interest, or expenses, taxes, and the various contingent expenses of cultivation, &c., $12 more, we shall find, upon striking the balance, that there will remain a profit of $10 the acre, amounting in the gross aggregate to the sum of $10,000 clear gain to the tenant in a single year!

In the vicinity of London, a hay farm, comprising one hundred and sixty acres, was rented. The rental in this instance, was $12 per acre, amounting in the whole to $1,920 per year. A very heavy expenditure was required for manure—probably as much as many a New England farmer would have been willing to give for the land, and yet the tenant succeeded, and has since become wealthy, and with no other income than the produce of his farm.

In Ireland, a poor man hired an acre of land, erected his cottage, purchased manure and farming tools, and the first season cleared all expenses, and had a balance of £8 left. And yet that Irish peasant, in addition to the expenses and outlays above enumerated, had a church tax to pay, and to be at the expense of purchasing his own seed, and maintaining a family of four besides himself and wife. The frugality of the Irish peasantry is proverbial. But there was something more than mere frugality at the bottom of this man's success. There was *thorough cultivation*—a thing which in New England may be said to be wholly unknown. This is the mystery, and the only one. That Irish peasant, with like expenses, would have starved here on forty acres with our cultivation.—*Western Farmer and Gardener.*

Rust, Blight, and Mildew of Wheat.

A correspondent of the Weekly Intelligencer, who signs himself C. A., and dates from Philadelphia co., makes the following remarks in relation to wheat.—Ed.

Our philosophers have theorised, and our farmers have descanted, upon the origin and cause, and effect of blight or rust, upon the stalks of wheat.

Of the effect, it is apparent that the proper juices of the plants are absorbed by some foreign substance, which prevents the proper ripening of the grain.

Our naturalists tells us that the blight is a plant of a parasitical nature, endowed with all the functions of growth and regeneration

that are necessary for any plant to have, in order to produce its kind.

If we examine with an ordinary magnifier those parasitical appearances, found so abundantly upon cedar fences, we shall find that they blossom, fructify and increase their kind in a manner similar to many other plants of a larger growth; and it is asserted that the blight when exposed to the action of a powerful microscope, exhibits all the phenomena of a living plant, but the truth of that is yet to be proven, as but few have examined minutely enough to risk their reputation on the assumption, while all admit, that, as a natural production, it must be formed according to nature's laws, and that its proper nutriment must be the juices of plants.

But be that as it may, its position as a plant or a disease will remain unknown, until it has been chemically tested; but when its nature and composition are once accurately ascertained, then, if a disease, chemistry will find a cure; if a plant, chemistry will teach man to apply a remedy that will make it seek other quarters.

Now it appears rational that as lichens, mosses, &c., do not very extensively attack trees in the vigor of their growth, they will not attack plants whose growth is sufficiently vigorous and healthy.

Hence, if we grow a stalk that shall be vigorous in all its life, and in all stages of maturity shall flourish with luxuriance; then the blight will be obliged to seek other quarters, as the wheat will be of too healthy a growth to allow of its substance being taken up by foreign plants for their support.

In order to grow a stalk of this kind, the earth must be supplied with an abundance of the materials that wheat requires for its support, i. e., carbon, nitrogen, hydrogen, oxygen and ashes. A compound of nitrogen and hydrogen forms ammonia, of oxygen and hydrogen forms water, and of oxygen and nitrogen forms atmospheric air.

Hence, in order that wheat may grow with the proper degree of luxuriance, the soil must be copiously supplied with water, ammonia, ashes and air.

The ammonia may be applied by wetting the grains and rolling them in powdered muriate of ammonia, as a quantity sufficient for maturing the plant will adhere to the grain, and the ashes can be applied to the soil; the air and water are within reach of the plant and therefore do not need attention or application.

Agriculture is the art of raising crops;—husbandry, the art of preserving and expending them.

Shell Fish as Manure.

Having noticed the good effects of shell fish in gardens, applied to carrot and onion beds, it occurred to a gentleman of our acquaintance that the same species of manure would be found equally useful on a larger scale, in the case of a green crop cultivated in the open field. Accordingly, he instructed his labourer to repair to the shore, and excavate four cart-loads of live shell fish, composed chiefly of wilks, cockles, and muscles. When carried home, the deposit was thrown into a heap, and allowed to remain until it began to emit an unpleasant odour. Warning thus given, the shells were smashed and mixed with peat earth, to absorb the moisture and facilitate the application. They were then laid in the drills, after the manner of bones, at the rate of 16 bushels per acre—sown with turnips—and the better to test the utility of the experiment, turnips were planted the same day over thick layers of barnyard manure. The seed on the shells took a wonderful start, the plants showing themselves at the end of three days, notwithstanding the intense drought; while the dung operated so slowly, that eight days elapsed before the slightest tendency to greening appeared.

Thus far the shells and substance enclosed have worked perfect wonders, and bid fair to outvie crushed bones, and even guano. The carbonate of lime and animal matter in shell fish are great nourishers of vegetable life. —*Dumfries Courier.*

Mending a Tree.—We saw at Isaac Frost's, Newton, a tolerably large apple tree that had the bark eaten all around by the mice, some years ago, and of course would have died without some extra pains to save it. Mr. Frost set about a dozen scions in the tree, one end in the green bark and wood below, and the other above the wound. They all took at both ends and grew well, excepting one which took only at the bottom and is forming a little tree by itself. The scions are now about two inches in diameter, and are touching each other. The tree is in a fine flourishing condition. This method of mending a tree is attended with some trouble, but by this simple means, which can be done in a few hours, a valuable tree may be saved, as has occasionally been the case.—*Maine Farmer.*

In West Chester co., N. Y., the disease in the potatoe is general. On Long Island, on heavy ground the rot is prevalent, but in light sandy soils, they have escaped. The continued wet weather is assigned as the cause by the Long Island Farmer.

Report on Indian Corn.

In a late number of the *Southern Agriculturist*, we find the following Report made to the Agricultural Society of South Carolina. That State already raises nearly corn enough for her consumption: and with the improved cultivation which may be anticipated from the use of lime, and her abundant supply of marl, we should not be surprised if in the course of a few years, she should have a surplus of this noble grain.—Ed.

Your committee on Indian corn, beg leave to report:—We consider the corn crop as second to no other crop made in the United States; and in this State, the advantage of raising our own supplies would be of great importance, and would save to the State a large sum of money spent annually for corn. Under these circumstances, any improvements in planting, or cultivating this valuable grain, must be interesting. By a judicious use of the plough, and other good management, the crop may be much increased, and in a few years, a full supply for the State might be expected.

In the years 1838 and '39, about 500,000 bushels of corn were imported. From October, 1841, to October, 1842, 360,000; and from October, 1842, to October, 1843, 260,000; showing an increase of the crop of the State, of 100,000 bushels in one year. This increase may be attributed to the efforts made by Mr. Ruffin and others, in recommending marl and other manures, and the proper use of ploughs.

All plants derive their nourishment from air, water and soil, and the corn plant must have a supply of air and moisture to effect a full developement of its growth; and the soil, to do its part, must be well manured and cultivated.

Where the land has been long planted, there is frequently a hard subsoil crust, which must be well broken up by the subsoil plough, to enable the perpendicular roots to penetrate deep into the earth, to obtain moisture for the plant.

In preparing land for a corn crop, we would recommend that in the early part of the winter, a furrow of six or eight inches deep should be made with the common plough, that the subsoil plough should be run in this furrow to the additional depth of ten or twelve inches, and that corn-stalks and other manure should be put in this trench, and listed in, when thoroughly wet, with a small plough or hoe, as may be convenient; the land to remain in this state, to the period of planting.

We cannot too highly recommend the use of the subsoil plough. By its use the soil will be less wet after great rains, and more moist in great drought. Mr. Delaplain informs us, that in 1823, he planted a field of 25 acres of corn; that in a part of this field he used the subsoil plough, and in the other part, the common tillage. A furrow was made with the common bar-share plough, five or six inches deep, and with the subsoil plough seven inches deeper—that in all other respects, the soil, planting and tillage, were the same. In that part of the field where the subsoiler was used, the corn kept its colour throughout the season, and produced 50 per centum more than the other. And where the common tillage was used, it suffered much from drought, and fired considerably.

Mr. C. M. Bement also states that he subsoiled a part of a piece of ground which he planted to Indian corn. The piece of ground was on a light loamy, or sandy knoll. That he subsoiled it in strips, leaving alternate strips not subsoiled, all being manured alike: he ran the subsoiler from eight to ten inches deep. The season proved to be very dry, and where the subsoil plough was not used, the corn was so burnt up that it produced nothing; but where it was used, the corn remained green and flourishing through all the drought, and produced a good crop.

The soil must be moist at the time of planting, or a good stand cannot be expected. The seed corn ought to have been selected with care in the field from those stalks bearing the greatest number of ears. And here we would recommend, in the highest terms, the use of the coal-tar, to preserve the seed from birds, &c. When the seed is well prepared by the use of coal-tar and soot, and the soil well moistened by a good rain, to be planted at the distance of three feet, the rows being from five to six feet apart; and either one, or two stalks should be left, according to the fertility of the soil. Where the soil is very rich, or highly manured, we think it best to plant at two feet apart, and to leave two stalks.

As soon as the corn is up, the plough ought to be used in breaking up and pulverizing the earth between the rows, and when five or six inches high, the best ploughman ought to run a furrow as near as possible to the plant, the bar side of the plough being next to it, and the other ploughmen may break up the intermediate space between the rows. At this period the ploughing ought to be deep and close, breaking up and pulverizing well the soil. By porosity of soil, the air is admitted, and a larger quantity of organic and inorganic food for the plant is afforded.

In dry weather the oftener the plough is used the better, until the corn is about one-third grown, after which, the plough ought

to be laid aside, and the cultivator or hoe-harrow used in its place. In wet weather, the plough ought never to be used. Corn is benefited at all periods of its growth, by the application of manure on the surface, over the roots. If the drought is great, and the corn far advanced towards maturity, the surface crust must be broken and the earth frequently stirred lightly, to admit air and moisture to the roots, but care must be had not to disturb or cut the lateral, or surface roots.

About the time corn is maturing, brace roots shoot out from the joints near the surface of the earth. These roots frequently strike deep into the earth, affording both nourishment and support to the plant. If a high hill has been made, these roots shoot out higher upon the stalk where it is brittle, and likely to be snapped off the first high wind. If there be little or no hilling, the corn would bend and yield to the storm, and rise again, having sustained little or no injury. This would be particularly the case, where the soil is very fertile and highly cultivated.

Well grown corn has from forty to sixty large roots extending from the joints under the ground, which, with the tap-root, penetrate deep into the soil, if not obstructed by a hard subsoil. From these large roots innumerable small fibrous roots shoot out in all directions towards the surface, extending across the rows five or six feet, in search of nourishment for the plant. The large perpendicular roots afford moisture, and the small fibrous roots food to the plant. The deeper the perpendicular roots penetrate the soil, the less injury the plant will sustain from drought. And the more the surface has been broken up and pulverized, the further the surface roots will extend in search of nourishment, to mature fine and large ears.

John H. Tucker, *Chairman.*

June 18th, 1844.

For the Farmers' Cabinet.

Philadelphia Butter.

The Best Butter is to be had only *in Philadelphia.* This may appear to be a rash assertion, but I appeal to all who have travelled over the country, whether there is not a *richness and fine flavour*, altogether exempt from any rancidity, acidity, or *tallowy taste*, not to be met with in the butter we get at hotels either north or south of that city? That it should excel Southern butter, is not to be wondered at, because the climate and the grasses are better, but why should it be better than that which we meet with in New York, and all through New England, the latter being, especially, a grass country? It cannot be that the process of butter making is better understood there than elsewhere, for every variety of process and contrivance for butter making has been set forth in the agricultural papers. Is it not that there is something peculiar in the pastures in the neighbourhood of Philadelphia, which affects the quality of the lacteal secretions—and in what does that peculiarity consist? Is it found that the best Philadelphia butter comes from cows that graze on the old *meadows below it?* If the fact assumed be disputed, it might be difficult to prove it;—all that could be done would be to leave it to the judgment of those who have had an opportunity of forming an opinion, and it would not be easy to collect their judgment in the matter; but supposing the fact of its superiority to be admitted, it is worthy of inquiry *why it is so?*

After an interval of twenty years, I have been again lately to Boston and that vicinity, and although I thought I could perceive some improvement in the quality of the butter there, I can safely say that never, either there or in the State of New York, have I met with butter that would bear a comparison, to my taste, with such as I have often eaten at the *table d'hote* of my old friend, at the old *Mansion House*, Philadelphia. The next best butter decidedly, according to the observation of the writer, is that from the dairies of the Hitlens—of Hampton—of Waverly, and others in the neighbourhood of Baltimore. Do your readers believe me to be correct in my impression? if so, can your correspondents throw any light upon the matter? It would not be worth while to argue and dispute about the *fact.*

S. S. I.

The Toad.—That poor, despised and harmless reptile, is admirable in its proportions, and has an eye of such transcendent beauty, that when I find one, I place it on my hand to view it more minutely. Its skin too, so completely adapted to the subterranean places into which it goes for shelter, is well worth the attention of the philosopher. As this little animal is innocuous, I feel sorry when I see it trampled under foot by inconsiderate people, who have learned from their grandmothers that it is full of venom.—*Waterton's Ornithology.*

M. Arago says the atmospheric pressure principle may be so applied, as to insure safe transit at the rate of six leagues a minute, or a thousand miles an hour.

From the New Genesee Farmer.

Successful Cultivation of Madder.

We have at different times heretofore adverted to the cultivation of Madder—*Rubia Tinctorum*—and are a good deal apprehensive that it might be made a profitable crop. We do not know that it has been successfully cultivated in Pennsylvania. The following article by our friend Bateham, editor of the Genesee Farmer, appeared more than a year ago in that paper, though it had not caught our eye till quite recently. It is published now with a hope that it may lead to further inquiry on the subject.—Ed.

In these times of national embarrassment, when the whole country is suffering under the ill effects of an immense indebtedness to foreign countries, it certainly is the duty of every good citizen to inquire what he can do to aid in restoring prosperity, or in removing the causes of adversity; and the man who successfully introduces or promotes the home production or manufacture of any article of consumption hitherto imported, is a true patriot, and deserves the thanks of his country.

It will doubtless be a matter of surprise to many, to learn that for the single article of Madder, we are annually paying an immense amount to foreign countries, while at the same time it is fully demonstrated that this article can be raised in the greatest perfection, and with good profit, in a large portion of the United States.

In the central or eastern part of the State of New York, madder has been cultivated for some years past, but I believe not very extensively, or with much profit, probably owing to a want of sufficient heat in summer to give luxuriance and depth of colour to the roots; but in the State of Ohio, and similar latitudes, this difficulty cannot exist, and the climate is doubtless as favourable as that of Germany, if not more so.

While travelling in the western part of Ohio the past month, I was informed that Mr. Joseph Swift, a farmer of Erie county, was largely engaged in the culture of madder, and found it very profitable. I accordingly determined to visit him and learn the facts in the case. Mr. Swift was one of the earliest settlers of that part of the country, having resided there nearly thirty years, on the farm he now occupies, which consists of about 400 acres of choice land, mostly alluvial bottoms, in the valley of the Vermillion river, seven miles from Lake Erie. Having informed himself on the subject, he commenced by planting nine acres of madder in the spring of 1839, which he allowed four seasons' growth, and harvested the crop the past fall. The result is, he is now building a large and beautiful house with the proceeds. I found Mr. Swift very hospitable and intelligent, and willing to communicate any information I desired. At my request he furnished me the following:

Practical directions for the cultivation of Madder, which, he remarked, must be understood as intended for those who wish to cultivate only a few acres, and cannot afford much outlay of capital. Those who wish to engage in the business on an extensive scale, would need to adopt a somewhat different practice.

Soil and Preparation.—The soil should be a deep, rich, sandy loam, free from weeds, roots, stones, &c., and containing a good portion of vegetable earth. Alluvial bottom land is the most suitable, but it must not be wet, nor too dry. If old upland is used, it should receive a heavy coating of vegetable earth, from the decayed wood and leaves. The land should be ploughed very deeply in the fall, and early in the spring apply about one hundred loads of well-rotted manure per acre, spread evenly, and ploughed in deeply; then harrow till quite fine and free from lumps. Next plough the land into beds four feet wide, leaving alleys between, three feet wide, then harrow the beds with a fine light harrow, or rake them by hand, so as to leave them smooth and even with the alleys; they are then ready for planting.

Preparing sets and planting.—Madder sets, or seed roots, are best selected when the crop is dug in the fall. The horizontal uppermost roots,—with eyes—are the kind to be used: these should be separated from the bottom roots, and buried in sand, in a cellar or pit. If not done in the fall, the sets may be dug early in the spring, before they begin to sprout. They should be cut or broken into pieces, containing from two to five eyes each; i. e. three to four inches long. The time for planting is as early in the spring as the ground can be got in good order, and severe frosts are over, which, in this climate, is usually about the middle of April. With the beds prepared as directed, stretch a line lengthwise the bed, and with the corner of a hoe make a drill two inches deep along each edge and down the middle, so as to give three rows to each bed, about two feet apart. Into these drills drop the sets, ten inches apart, covering them two inches deep. Eight or ten bushels of sets are requisite for an acre.

After culture.—As soon as the madder plants can be seen, the ground should be carefully hoed so as to destroy the weeds and not injure the plants; and the hoeing and weeding must be repeated as often as weeds make their appearance. If any of the sets

have failed to grow, the vacancies should be filled by taking up parts of the strongest roots and transplanting them. This is best done in June. As soon as the madder plants are ten or twelve inches high, the tops are to be bent down on to the surface of the ground, and all, excepting the tip end, covered with earth shoveled from the middle of the alleys. Bend the shoots outward and inward, in every direction, so as in time to fill all the vacant space on the beds, and about one foot on each side. After the first time covering, repeat the weeding when necessary, and run a single-horse plough through the alleys several times to keep the earth clean and mellow. As soon as the plants again become ten or twelve inches high, bend down and cover them as before, repeating the operation as often as necessary, which is commonly three times the first season. The last time may be as late as September, or later, if no frosts occur. By covering the tops in this manner, they change to roots, and the design is to fill the ground as full of roots as possible. When the vacant spaces are all full, there will be but little chance for weeds to grow; but all that appear must be pulled out.

The second year.—Keep the beds free from weeds; plough the alleys and cover the tops, as before directed, two or three times during the season. The alleys will now form deep and narrow ditches, and if it becomes difficult to obtain good earth for covering the tops, that operation may be omitted after the second time this season. Care should be taken when covering the tops to keep the edges of the beds as high as the middle, otherwise the water from heavy showers will run off, and the crop suffer from drought.

The third year.—Very little labour or attention is required. The plants will now cover the whole ground. If any weeds are seen they must be all pulled out, otherwise their roots will cause trouble when harvesting the madder. The crop is sometimes dug the third year; and if the soil and cultivation have been good, and the seasons warm and favourable, the madder will be of good quality; but generally, it is much better in quality and more in quantity, when left until the fourth year.

Digging and harvesting.—This should be done between the 20th of August and the 20th of September. Take a sharp shovel or shovels, and cut off and remove the tops within half an inch of the surface of the earth; then take a plough of the largest size, with a sharp coulter and a double team, and plough a furrow outward, beam deep, around the edge of the bed; stir the earth with forks, and carefully pick out all the roots, removing the earth from the bottom of the furrow; then plough another furrow beam deep, as before, and pick over and remove the earth in the same manner; thus proceeding till the whole is completed.

Washing and drying.—As soon as possible after digging, take the roots to some running stream to be washed. If there is no running stream convenient, it can be done at a pump. Take large, round sieves, two and a half or three feet in diameter—found in eastern cities—with the wire about as fine as wheat sieves; or if these cannot be had, get from a hardware-store sufficient screen-wire of the right fineness, and make frames or boxes about two and a half feet long and the width of the wire, on the bottom of which nail the wire. In these sieves or boxes, put about half a bushel of roots at a time and stir them about in the water, pulling the bunches apart so as to wash them clean; then, having a platform at hand, lay them on it to dry. To make the platform, take two or three common boards so as to be about four feet in width, and nail cleets across the under side. On these spread the roots about two inches thick for drying in the sun. Carry the platforms to a convenient place, not far from the house, and place them side by side, in rows east and west, and with their ends north and south, leaving room to walk between the rows. Elevate the south ends of the platforms about eighteen inches, and the north ends about six inches from the ground, putting poles or sticks to support them, and it will greatly facilitate drying. After the second or third day drying, the madder must be protected from the dews at night and from rain, by placing the platforms one upon another to a convenient height, and covering the uppermost one with boards. Spread them out again in the morning, or as soon as danger is over. Five or six days of ordinarily fine weather will dry the madder sufficiently, when it may be put away till it is convenient to kiln dry and grind it.

Kiln drying.—The size and mode of constructing the kiln may be varied to suit circumstances. The following is a very cheap plan, and sufficient to dry one ton of roots at a time. Place four strong posts in the ground twelve feet apart one way, and eighteen the other; the front two fourteen feet high, and the others eighteen; put girts across the bottom, middle and top; and nail boards perpendicularly on the outside, as for a common barn. The boards must be well seasoned, and all cracks or holes should be plastered or otherwise stopped up. Make a shed roof of common boards. In the inside

put upright standards about five feet apart, with cross pieces to support the scaffolding. The first cross pieces to be four feet from the floor; the next two feet higher, and so on to the top. On these cross pieces lay small poles about six feet long and two inches thick, four or five inches apart. On these scaffolds the madder is to be spread nine inches thick. A floor is laid at the bottom to keep all dry and clean. When the kiln is filled, take six or eight small kettles or hand furnaces, and place them four or five feet apart on the floor,—first securing it from fire with bricks or stones—and make fires in them with charcoal, being careful not to make any of the fires so large as to scorch the madder over them. A person must be in constant attendance to watch and replenish the fires. The heat will ascend through the whole, and in ten or twelve hours it will be all sufficiently dried.

Breaking and grinding.—Immediately after being dried, the madder must be taken to the barn and thrashed with flails, or broken by machinery,—a corn-cracker or something of the kind—so that it will feed in a common grist-mill. If it is not broken and ground immediately, it will gather dampness so as to prevent its being ground. Any common grist-mill can grind madder properly. When ground finely it is fit for use, and may be packed in barrels like flour for market.

Amount and value of product, &c.—Mr. Swift measured off a part of his ground and carefully weighed the product when dried, which he found to be over two thousand pounds per acre, notwithstanding the seasons were mostly very dry and unfavourable. With his present knowledge of the business, he is confident that he can obtain at least 3000 pounds per acre, which is said to be more than is often obtained in Germany. The whole amount of labour he estimates at from 80 to 100 days work per acre. The value of the crop, at the usual wholesale price—about 15 cents per pound—is from 300 to 400 dollars. In foreign countries it is customary to make several qualities of the madder, which is done by sorting the roots; but as only one quality is required for the western market, Mr. Swift makes but one, and that is found superior to most of the imported, and finds a ready sale.

If any person desires instruction for making several qualities of madder, or further information respecting any other point, it may be obtained by addressing, (post paid) Joseph Swift, Birmingham, Erie co., Ohio.

M. B. Bateham.

Cattle should have plenty of good water.

The Drummond Light.

This brilliant and splendid means of illumination has recently attracted public attention to a considerable extent, and a great deal of curiosity has been expressed by those not familiar with its use, as to its mode of production and utility for ordinary purposes. The light is produced by a small cylinder of quick lime heated to whiteness by means of the oxyhydrogen blow-pipe, an instrument which was invented by Dr. Hare, Professor of Chemistry, in the University of Pennsylvania, and which as applied to many purposes in the Chemist's Laboratory is found to be a most useful and ingenious contrivance.

This blow-pipe is a very simple instrument, by which two streams, one of oxygen, and the other of hydrogen gas, are made to terminate in a common jet. Hydrogen being a very combustible gas, and oxygen the most active supporter of combustion, the one being inflamed in the other as they issue from a common orifice, occasions the most intense heat yet produced. In this flame, a small piece of lime is placed, which immediately becomes intensely incandescent, and evolves a light so bright as to be painful to the eyes, when looked at for a few minutes, while it illuminates every thing upon which it shines to a degree scarcely surpassed by the light of the sun.

The Drummond Light, though by no means the most important use to which Dr. Hare's Compound Blow-pipe is applied, is capable of several useful applications. It was first employed, for practical purposes, by Lieutenant Drummond, in the Trigonometrical Survey of Ireland, and hence it has received—very improperly, as some think—its present name: for whatever credit may be attached to Lieutenant Drummond for its first application, the honour of its invention is certainly due to Professor Hare. It has been within a few years successfully applied upon the coast in light-houses, for which it is particularly suited by its intensely brilliant and star-light appearance. It has also been applied with great success in the oxyhydrogen microscope, which has attracted great attention, as recently exhibited by Dr. Lardner and others in this city.

One of the chief objections to this light for the illumination of houses and public halls, is its painful and injurious effect upon the eyes; this, however, may be obviated by placing it near the ceiling and in such a position as to throw its rays into all parts of the room, without being in the direct line of vision. Another difficulty is its expense,

which would be considerably greater than that of the ordinary city gas. For very large rooms, however, in which one Drummond light would be sufficient, and which are only lighted occasionally, and for a few hours at a time, this would hardly be an objection. The chief item of cost is the oxygen gas, which in its greatest purity is made from the chlorate of potash, a salt which costs one dollar per pound; one pound is sufficient to make about thirty gallons of the gas, which in an ordinary jet would burn, perhaps, five or six hours. To this must be added the small expense of the hydrogen gas and lime, together with the wear and tear of the apparatus, which would make one light, such as that ordinarily used in the exhibitions to which the public have had access, cost about 35 cents per hour, or somewhat less where it was used as a permanent means of illumination.—*Weekly Intelligencer.*

Guano as a Manure; from Dr. Gardner's Essay.

Manures may be divided into two classes—those that merely forward the growth or developement of cellular tissue, and give dimensions without solidity—and those that yield the inorganic basis of plants, and give firmness. Ammonia and azotized matters belong to the former, whilst bone-earth, lime, ashes, &c., represent the second class. But farm-yard manure and the excrement of birds, in which the urine and fæces are mingled, contain both essentials, and are serviceable not only in giving luxuriance of growth, but an increased supply of grain. Hence their value and uniform success. But these complex manures differ much in quality, as they contain an excess of one or other of the bodies enumerated. Practice has not yet determined how much nitrogen is best, but so far as experiments with guano have tended to a solution of this vital question, it would appear that ordinary specimens are not too rich for highly cultivated plants. Now guano may be represented as a compound of 20 per cent. azotized matters, 30 per cent. bone-earth, 10 per cent. alkaline salts, and the rest humus and sand—and is worthy of attention as furnishing us with an extremely successful compost, well calculated as a formula for artificial mixtures. It is questionable, however, whether for many plants, such as clovers and grasses, the proportion of nitrogen is not too high, and calculated to produce herbage luxuriant in dimensions, but cellular and loose in structure, as is known to be the case with sulphate of ammonia. Hence guano uniformly produces large bulbs in turnips and potatoes, and a great increase of straw. It will be found that in poor lands, by which I mean those containing little soluble saline matter, the tendency of the manure is to act in this way—but in well prepared soils it will not exhibit so marked an excess in the proportion of nitrogen; for the nitrogen, in the form of ammonia, entering the plant, increases the function of nutrition to the highest point, and there is a necessity created for saline bodies of the second class of manures, which, if freely supplied, leads to a firm as well as luxuriant growth, but if not simultaneously introduced, leads to an imperfect developement. On a rich soil, the saline substances will be attainable, but on poor land, badly tilled, they will be wanting.

There is nothing specific in the form of guano that hinders it from being imitated. Pigeon and fowl excrement in a similar state of decay, would produce the same effects. But in making artificial guano, there is one difficulty to be overcome before the great value of the natural article can be produced. The oxalate and urate of ammonia yield their base *gradually* by decay, and not suddenly, as would be the case with carbonate of ammonia used as a substitute. It is necessary to imitate this gradual production of carbonate of ammonia before any artificial manure can equal guano, when applied in a similar bulk. To this end there should be introduced animal matters with a high per centage of nitrogen, and in a state of rapid decay. Dried blood, hair, horn-shavings, wool, dried muscle and fish, gelatine of bones, might all be prepared in a state of powder, and liable to quick decomposition by a little attention, and being added to the mineral constituents of artificial guano, would produce a compost of the highest value.

The substance nearest approaching guano in composition is dried urine, which is not at all inferior in agricultural value—the only difference being the presence of urea in place of urate of ammonia, and less phosphate of lime. Artificial guanos have met with favour amongst English farmers, and been extensively used—but it is impossible to give an estimate of their value from experiments hitherto made: some specimens have attained one half the value of the Peruvian, whilst others fall very far below. The best formulæ are as follows:

Mr. Fleming's artificial Guano.—Bones dissolved in muriatic acid, 224 lbs.; charcoal powder, 224; sulphate of ammonia, 112; salt and gypsum, each 112; wood ashes, 560; nitrate of soda, 28; sulphate of soda and magnesia, each 10.

Turnbull's artificial Guano (supposed.)—Sulphate of soda, 224 lbs.; sulphate of ammonia, 224; carbonate of soda, 112; bones, partly dissolved, 1680.

There were used, in comparison with guano and farm-yard manure, on Swedish turnips, by Mr. Fleming:—

		Tons.	cwt.	qrs.	Expense. £.	s.	d.	Gain in weight. Tons.	cwt.	qrs.
Nothing,		12	5	2						
Guano,	3 cwt.	23	8	2	3	15	0*	11	3	
Turnbull's,	3 cwt.	14	11	2	1	4	0	2	6	0
Fleming's,	3 cwt.	17	14	1	1	10	0	5	8	3
Farm-yard manure,	20 tons	18	11	2	10	10	0	6	6	0

* Guano is estimated at six dollars the hundred weight.

It appears from this experiment that Mr. Fleming's mixture, at less than half the price, produced a gain nearly equal to half that of the guano, and that it is better than Mr. Turnbull's.

In both these composts, and in that recommended by Professor Johnson, there is not a sufficient amount of ammonia. The following more nearly resembles guano: Sulphate of ammonia, 30 lbs.; bones dissolved in muriatic acid, 30; fine ashes, 50; dried animal matter, prepared in powder, with humus, 100. The whole to be mixed intimately, and applied in several parcels, as a substitute for one cwt. of guano. The prepared animal matter may be obtained in the following manner: Let the flesh, fish, blood, &c., be dried by a stove, and then cut or bruised as far as possible; make a heap, with very fine mould, the animal matter and caustic lime, laying them together lightly, and exposing to the air under a shed. If any putrefaction occurs, add more lime: in a short time, depending upon the weather, the whole will be reduced to a powder.—Care must be taken that the animal substance is well dried. Shavings of horn, bones, wool, &c., require more time for disintegration.—*New York Farmer and Mechanic.*

The failure of the potatoe crop seems to be universal throughout the Northern States. In this vicinity scarcely any will be preserved. The Barre Gazette says: "Nearly or quite the entire crop of potatoes in this region is lost. When dug, they are found to be diseased and rotten. Some have been dug early, and placed in the cellar in an apparently sound condition, and in a few days found to be decaying fast. They appear, to sight and smell, as if rotten. Several of our farmers have commenced ploughing them in, in the field. We learn that the difficulty extends to all the region about us. It is said some hogs have died after being fed with them. No reasonable cause is given for this singular occurrence. Should the crop fail throughout New England in the same manner, great suffering, as well as loss, must ensue."—*Greenfield (Mass.) Democrat.*

Disease among Potatoes.—We have several times alluded to the disease among potatoes. The same disease is noticed in the Amherst Express, Pittsfield Sun, and Bridgeport (Ct.) Farmer. It appears to be very extensive, and this crop in many towns is nearly destroyed. We have a field of "Mercers," that have nearly all rotted, while "Carters" adjoining, appear much less injured. A writer in the last Pittsfield Sun, remarks: "As yet, I believe no one has accounted for this disease. On examining my own field, I find that each remaining green leaf is covered with small insects, about the size of the house flea, very black, which fly off when disturbed. The tender parts of the leaves appear to have been eaten, which may account for the premature decay of the tops."—*Northampton (Mass.) Democrat.*

Diseased Potatoes.—We learn from several farmers, that their potatoes are dying, and that their crop will be almost an entire failure. We have seen several fields, mostly of the pink-eye variety, where the tops were dead. The potatoes probably not more than half grown. What is the cause of this, we do not know. The season here has been favourable for the crop. We have noticed among some early potatoes we have raised, that a considerable portion are affected with the disease, which proved so disastrous to the potatoe crop in this country and in England, last year. We invite the attention of correspondents to this subject, and hope to hear from them in our next number.—*Central N. Y. Farmer.*

Disease among Potatoes.—We have noticed throughout the country, that potatoes show signs of premature decay. The vines generally hold green until the first frost; but this year the vines of some entire

fields have commenced drying up, while the potatoes have not half reached their maturity. The crop will not be half a yield. We learn from a gentleman who has passed through New York, recently, that the same disease seems to be prevalent throughout that State. This is very singular, and is a subject of sufficient importance to claim the attention of scientific men, that the causes may be made known, and if possible, the evil remedied another year.—*Pittsfield, Massachusetts, Eagle.*

The Potatoe Crop.—There is no crop of vegetables of so much value and importance to all classes, as the potatoe. It is bread, and meat, and drink, and sustenance, to the needy; with potatoes, it is impossible to starve, and they are the delight of the rich as well as the poor—there is no aristocracy about a potatoe. The man of wealth has them served up in various shapes and forms at his table—the boiled mealy potatoe, the fried, the mashed, the scolloped and the stewed, while the poor thrust them peel and all under the burning embers, and with a little salt make a meal upon them fit for an emperor. How painful therefore, it is to learn that whole crops of this valuable esculent have been destroyed by the rot. Farmers, scientific cultivators, and chemists, should employ themselves assiduously in discovering the cause. Is it in the soil, in the manure, in the cultivation, in the seed, or in the planting? We hope nothing will be left undone to ascertain the cause and apply the remedy.—*Saturday American.*

The potatoe crop throughout New York, is stated to be ruined. The Shakers, who engaged to deliver fifteen thousand bushels in that city, have given notice of inability to furnish a single bushel, and will hardly have enough for their community, offering to the "world's people" the whole crop, if they would dig it. The only section from which no complaint is heard, is Maine, but it is hardly possible that even there the crop has escaped the disease.—*Saturday American.*

The New Fertilizer—Guano.

The Inverness (Scot.) Courier brings forward a statement to make stronger the truth of the old saying, that there is "nothing new under the sun," and with reference to guano as a manure, remarks that it is mentioned in Robertson's "History of America," speaking of the ancient agriculture of the Peruvians, where the author says, "They enriched the soil by manuring it with the dung of sea-fowls, of which they found an inexhaustible store in all the islands scattered along their coasts." And in a note he adds, "The Spaniards have adopted those customs of the ancient Peruvians; they continue to use guano, or the dung of sea-fowls, as manure. Ulloa gives a description of the almost incredible quantity of it in the small islands near the coast." We had thus the name and use of guano told us by Robertson seventy years ago.

Guano.—We find the following paragraph in Burke's account of the European settlements in America:

"The district which produces this pepper in such abundance, is small but naturally barren; its fertility in pepper, as well as in grain and fruits, is owing to the advantages of a species of a very extraordinary manure, brought from an island called Iquiqua. This is a sort of yellowish earth of a fetid smell. It is generally thought to be the dung of birds, because of the similitude of the scent, feathers having been found very deep in it, and vast numbers of sea fowls appearing upon that and all the adjacent coasts. But on the other hand, whether we look upon this substance as the dung of these sea fowls, or a particular species of earth, it is almost equally difficult to conceive how the small island of Iquiqua, not above two miles in circumference, could supply such immense quantities, and yet after supplying upwards of twelve ship loads annually, for a century together, for the distant parts, and a vastly larger quantity for the use of the neighbourhood, it cannot be observed that it is in the least diminished, or that the height of the island is at all lessened."

Peruvian Guano.—All the departments of art and industry have their occasional novelties. The reigning novelty in the agricultural world—that is, in this part of it—is the substance called guano, which the reader will perceive is advertised as on sale in Baltimore. This manure consists of the deposite of sea birds that roost and breed on the islands on the south-west coast of America. It has been used for ages in Peru, and is there so indispensable to the growth of corn and wheat, that, according to some writers, the country would have been a barren waste without it.

Its use in England, where it has been applied with wonderful results to almost every sort of crop that grows in that country, is of comparatively recent date; just long enough to have spread a conviction of its efficacy so widely as that seven or eight hundred vessels are now employed in the "guano trade!"

Its strong recommendation consists in the small compass of bulk and weight which renders cheap and easy, the transportation to any distance, of a great amount of fertilizing power. A calculation has been made by a careful and discreet farmer near Petersburg, to show that guano, at the rate of even four hundred pounds to the acre, which is a very liberal allowance, two to three cwt. being the usual quantity, does not cost, at $3 per hundred, more than half as much as the stable manure required to produce the same results, at twenty-five cents for the two-horse wagon load, when hauled from one and a half to three miles.

To gratify our agricultural readers, we subjoin the analysis of the genuine guano by Prof. Ure, of London. So great is the demand for Peruvian guano, that a spurious compound in imitation of it has been manufactured.

Average result of analysis of the genuine guano, in reference to its agricultural value, by Professor Ure, M. D. F. R. S.

Azotized organic matter, included urate of ammonia, and capable of affording from 8 to 17 per cent. of ammonia by slow decomposition in the soil.	50.0
Water	11.0
Phosphate of lime	25.0
Ammonia, phosphate of magnesia, phosphate of ammonia and oxalate of ammonia, containing from 4 to 9 per cent. of ammonia	13.0
Siliceous matter from the crops of birds,	1.0
	100.0

To distinguish "the true from the sham," Professor Ure says that genuine guano, when burned upon a red hot shovel, leaves a white ash of phosphate of lime and magnesia, whereas the foreign substance leaves a black fused mass of sea salt, copperas, and sand. The specific gravity of good fresh guano is never more than 165, water being 100, whereas that of this substance is as high as 217, as produced by the sand, salt, and copperas in it.—*Exchange Paper.*

From the Saturday American.

Lightning Rods.

I WILL consider the several queries proposed in your favour of August 30th, in order.

1. "Do the square rods possess any superiority over the round ones as conductors of electricity?"

Faraday, one of the best authorities on electricity, asserts that the conducting power of a rod is proportioned to its *mass*, or quantity of matter and not to its surface; and the same doctrine is assumed by an English writer, in "Sturgeon's Annals of Electricity." It is admitted that the fluid pervades only the surface; still it is maintained that the conducting power depends on the mass. I have not in my possession any set of experiments which authorises the opinion of Faraday, but *he* doubtless had, or he would not have asserted it to be a fact. If this doctrine be true, then so long as the mass is the same, it is of no consequence whether the rod is square or round.

2. "Are a *number* of points attached to the extremity of a rod preferable to *one?*"

According to the experiments of Earl Stanhope, made more than sixty years ago, a *single* needle will discharge a leyden jar more rapidly than a bundle of the same; and in conformity with this, a single point is generally used for the termination of lightning rods in Europe, and I believe one is preferable to several—especially where they diverge from each other as they commonly do. In the lightning rods constructed by a skilful manufacturer in this city, the upper termination is formed of a sharp copper spindle, at the base, of the same diameter as the rod—say an inch or three-fourths of an inch. This is permanently gilded by the electrotype process. It makes a beautiful finish; as may be seen in the rods recently erected on the new Library of Yale College. The joint where the spindle is attached to the rod is as perfect as possible—a cylindrical projection on the spindle, nicely turned, fitting closely into a hole in the end of the rod, nicely bored. All the parts of a rod should be fitted by joints as close as this. Many rods have proved defective, within my knowledge, merely because the parts were united loosely by the *hook-and-eye* joint.

3. "Are *tubes* to be preferred to solid cylinders, on account of the greater surface exposed?"

If Farady's doctrine that the conducting power is proportioned to the mass, is true, then the tubes, of a given diameter, cannot be equal in power to solid rods.

4. "Do the *projecting points* placed along the whole length of a rod, and at right-angles with it, in some forms of conductors, increase the efficacy of the rods?"

In case a rod is well connected with the ground, so as to deliver the charge freely, I think such points are unnecessary, so far as they are supposed to dissipate the charge, and therefore to render it less dangerous than when it traverses the rod in a concentrated state. They are sometimes appended on the idea of inviting or directing a lateral or horizontal charge; but I have never seen any well attested fact of their utility in such cases. It appears to me of great importance to preserve all possible simplicity and cheap-

ness in the construction of rods, else we cannot hope for their being generally used. Hence, any appendage that is not decidedly advantageous, ought to be avoided.

5. "Are not vanes, balls, and ornaments which are often placed on rods, obstructions to the fluid?"

I think these appendages do not generally affect the efficacy of a rod.

6. "Should not lightning rods have a clean smooth surface; and would not a coating of *tin* be beneficial?"

I do not suppose it to be important that the surface should be *smooth;* but it ought to be free from *rust*,—which greatly impairs the conducting power of iron. A coating of black paint,—the basis of which is charcoal, (a good conductor,) or, better, a galvanized surface—which is not liable to oxidize, is essential to the permanent efficacy of a rod.

The most essential points in the construction of a rod, appear to me to be these: that the rods should project sufficiently high above surrounding objects, and terminate in a bright metallic spinale,—that its parts should have as perfect continuity as possible, and that it should descend to the depth of permanent moisture.

Denison Olmsted.

Yale College, Sept. 3rd, 1844.

Marl Underlying Charleston.

Extract of a letter from Prof. Bailey of West Point, to Dr. J. Lawrence Smith.

It may be that the extract from this letter is of too purely a scientific character for this journal; but it must be interesting to us all notwithstanding, as it is connected with the geological structure of the spot we inhabit; a few preliminary observations will make what follows more intelligible.

Ehrenberg, a distinguished German naturalist, discovered a few years since, that there existed immense beds of earthy matter miles in extent, and many hundred feet in thickness, formed solely of the remains of microscopic animalcules, so small that millions were comprised within the compass of a cubic inch; their forms are varied, and their composition that of pure sand; in fact these little creatures when alive, were enveloped in flinty cells so indestructible as to remain perfect to the present day, a monument of their previous existence; these deposits have been found in many parts of the globe, but no where in greater abundance than in this country. There is a material brought from one of the Northern States, and used as a polishing powder, that consists entirely of these remains. Ehrenberg also found chalk to be made up of the remains of microscopic animalcules, whose covering was composed of carbonate of lime instead of silica.

These facts which may appear simply to show the wonders of nature, are destined to be of incalculable service to the geologist in pointing out the comparative ages of many formations upon the globe, and Prof. Bailey of West Point has directed his attention to this subject, his labours have already been of great service; and we look with anxiety to see a complete detail of what he has done in this department of science. The subject of this letter is the immense bed of marl that underlies Charleston, and perhaps a large portion of the eastern half of this State, the thickness of this bed is unknown; it has been penetrated to a depth of over three hundred feet, and the specimens examined were from this boring.

"You can now inform the good people of Charleston that their *city is built upon a bed of animalcules several hundred feet in thickness*, every cubic inch of which is filled with myriads of perfectly preserved microscopic shells. These shells, however, do not, like those beneath Richmond and Petersburg, &c., belong to the silicious infusoriæ, but are all derived from those minute calcareous shelled creatures, called by Ehrenberg polythalami. You are aware that Ehrenberg proved *chalk* to be chiefly made up of such shells, and you will doubtless be delighted to learn that the tertiary beds beneath your city, are filled with more numerous and more perfect specimens of these beautiful forms, than I have ever seen in chalk or marl from any other locality. These forms are destined to be of great value in geology, and when the precise position of the formation beneath Charleston shall be fixed, and the forms belonging to each bed determined, we shall then have so perfect a guide to the geology of a large portion of our southern country, that by a mere glance through the microscope at portions of strata, scarcely large enough to be seen by the naked eye, their characteristic fossils may be seen, and their true position in the series determined. It will be a great labour however, to give the subject all the developement it needs. I have myself examined the forms from as many as forty different and distant portions of our continent, but still feel very diffident in using the knowledge thus acquired."

"This polythalamia to whose labours South Carolina owes so large a portion of her territory, are still at work in countless thousands upon her coast, filling up harbours, forming shoals, and depositing their shells to record the present state of the sea-shore as their predecessors, now entombed beneath

Charleston, have done with regard to the ancient ocean."—*Southern Agriculturist.*

Madder.

Communicated for the Farmers' Cabinet.

To the Agricultural Society of Newcastle County, Del.

I HAVE noticed with regret the low prices which the staple articles of agricultural produce of this district, command at this time, owing in a measure, to their being brought into competition by means of the Western rail roads and canals, with the cheap fertile lands in the northern parts of the Mississippi Valley. Under these circumstances it behoves every farmer and friend to the farming interest, to endeavour to find other objects of culture, on which they may bestow their time and labour, with more profit to themselves, and advantage to the community.

Among other articles that may not be wholly unworthy attention, in this respect, is that of Madder for dying—*Rubia tinctorum.*

Although this colouring matter, may at first view, appear of but small consequence, yet we may reflect, that there are now imported into this country annually, upwards of *five thousand tons*, at a cost of more than *one million of dollars.* And if our manufacturing establishments continue to be sustained, the consumption will yearly increase; may it not therefore, in a short time, become a profitable article of cultivation, to many of our farmers.

From experiments which have been made, it is found, that it can be produced in this climate, of quite as good, if not a superior quality, to that which is imported. Under this view, may we not look forward with a hope, that at no very distant day, it will become a valuable article in our items of export!

Madder is now brought into the United States principally from Holland and Germany; their mode of cultivation has heretofore been represented as tedious, and laborious, requiring much care and skill as well as a large outlay of capital. These representations appear to have deterred most of our American farmers from undertaking its culture. It is true, the crop requires four years to bring it to full maturity, and needs some labor, knowledge and capital; but from the experience of Joseph Swift, an enterprising farmer of Erie county Ohio, who has been engaged in its culture for several years, it has yielded more clear profit in proportion to the land occupied and labour bestowed, than any other crop he could raise, viz. $200 net profit per acre every four years.

The above few hasty observations, are made merely to call more able, and experienced minds to the subject, if any should think it deserving their attention.

Very respectfully,

JACOB ALRICHS.

DR. J. W. THOMSON,
President, &c.

Before the above communication was received, the article on the same subject on page 91, was in type. We are pleased to find our friend's attention has been directed to it: and hope others whose situation may be favorable, will make the necessary enquiries, and act accordingly. The reasons given by J. Alrichs for the cultivation of madder in the middle states, are certainly very cogent ones. We must here, if we would compete with our western farmers, not only endeavour to produce large crops at little expense as possible, but we must look around, and see if we cannot in some particulars, bring about a *change* of crops. The Editor is aware that this is but a repetition of what he has heretofore several times said: he hopes the nature of the subject, will plead his excuse.—ED.

For the Farmers' Cabinet.

Mustard Seed.

TO THE EDITOR,

WE have recently purchased from J. H. Parmlee of Ohio, a part of his crop of brown mustard seed, raised, as he informed us, on 27 acres of good rich land, prepared with as much care as is usually bestowed upon wheat land. The seed, he says, was planted in rows one foot apart one way, and two feet the other. The crop was well worked during the season, and when near ripe was cut with sickles, laid on sheets or wagon covers, hauled to the barn in the sheets, and there thrashed out and fanned.

He has delivered to us as a part of the product of 27 acres of land, 114 barrels, containing 382 bushels 45 lbs. of brown mustard seed, weighing 52½ lbs. per bushel, making 20,100 lbs., for which we paid him 8 cts. per lb., making $1608.00

and he has, he says 100 bushels of tailings, which he estimates will clean up 75 bushels, say 50 lbs. per bu., making 3,750 lbs. at 8 cts. 300.00

Product of 27 acres of brown mustard seed, $1908.00

or $70.66 per acre.

The time is not far distant, if not already at hand, when the interests of the American farmers will be best promoted by devoting a

portion of their time and land to the raising of many crops which are now imported from countries refusing (except when their own crops fail) the surplus of the American farms, and thus not only raise the prices of their grain crops by diminishing their quantity, but secure to themselves a large amount of money which is annually sent out of the country to purchase these crops; mustard seed is one of them, which can be raised here to a profit, and for which, if the seed is delivered clean and in good order, the demand will be found very active and certain. Respectfully,

C. J. Fell & Brother,
Mustard Manufacturers, 64 S. Front Street,
Philadelphia, 9th mo. 28, 1844.

The Indian Summer.

By Brainard.

What is there saddening in the autumn leaves?
Have they that "green and yellow melancholy"
That the sweet poet spake of?—Had he seen
Our variegated woods when first the frost
Turns into beauty all October's charms—
When the dread fever quits us—when the storms
Of the wild equinox, with all its wet,
Has left the land, as the first deluge left it,
With a bright bow of many colours hung
Upon the forest tops—he had not sighed.
The moon stays longest for the hunter now:
The trees cast down their fruitage, and the blithe
And busy squirrel hoards his winter store:
While man enjoys the breeze that sweeps along
The bright, blue sky above him; and that bends
Magnificently all the forest's pride,
Or whispers through the evergreens, and asks,
"What is there saddening in the autumn leaves?"

Gathering Potatoes.

Irish potatoes, if it is desirable to have them in all their excellence, should never have the sun shine on them after they are dug, and should be exposed to the air and light as little as may be. Potatoes pitted or buried in holes in the field, retain their freshness and good qualities much later than those put in open bins in the cellar; and the farmer will always do well to have a few pitted for spring use. The necessity for this may in a great measure be obviated, by lining the bottom and sides of a bin with turf, and when it is filled, covering it in the same manner. Potatoes will keep perfectly sound and good for years, if placed so low in the earth as to have a temperature too low for vegetation. Experiments made in a compact soil, on the north side of buildings or walls, show that four or five feet will usually be sufficient; in a lighter or more porous soil, a greater depth is requisite. No water in any case should stand on potatoes, as it will soon destroy them. If potatoes are dug and pitted early, there should be an opening made at the apex of the heap, and filled with a wisp of straw, to keep out the rain, but at the same time to allow the heated air to pass off.—*American Farmer.*

Experiments with Guano.—At a late meeting of the Isle of Man Agricultural Society, the following statement was read of some experiments which had been made with guano by Mr. Lyle, of the Kirk Onchan Nursery. On a light and poor soil were two plats of grass; one of Stickney's rye grass, mixed with small quantities of *holcus lanatus* and *poa trivialis;* the other of Italian rye-grass. A space was measured off from each of these patches, and on the 12th of May last, both the spaces were top-dressed with guano, at the rate of three cwt. per acre. On the 20th of June, one square yard of the dressed and undressed spaces, taken as fairly as possible, was cut and carefully weighed, when the following were the results: The produce from one square yard of Stickney's rye grass, dressed with guano at the above rate, weighed 7½ lbs.; while that which had not been so treated weighed but 2¾ lbs. The Italian rye-grass dressed with guano, weighed 10½ lbs.; whereas that which had not received any, weighed only 4¾ lbs. Guano was also applied on the 12th of May, at the same rate, to a row of young elms; and on the 20th of June, this row could be distinguished, even at a considerable distance, from the others, by its deep and healthy green, and more vigorous growth. A row of larches was dressed in like manner with precisely similar effects, the neighbouring rows decidedly partaking of the benefits of the application. On a row of strawberries, and upon those adjoining, effects similar to the last were produced.—*Liverpool Times.*

THE FARMERS' CABINET,
AND
AMERICAN HERD-BOOK.

Philadelphia, Tenth Month, 1844.

The sixteenth Exhibition of the Pennsylvania Horticultural Society, took place in the two grand saloons of the Museum building on the 18th, 19th, and 20th ult.

The weather was clear and fine, and particularly calculated to call out for enjoyment, all who delight in the profuse display of fruit, flower and vegetable, for which our vicinity has deservedly so high a character. Every one felt and acknowledged the superior arrange-

ment of the present season over the preceding, when our readers will recollect but one of the rooms was occupied. Notwithstanding the crowds that gathered there from day to day, and in the evenings particularly, there was ample room for all to move with tolerable comfort; and though at times you were obliged to float along with the mass, without being at all able to look to the ostensible objects of your visit, yet the show was by no means so suffocating as we have sometimes known it in previous years, when there was much less room.

The Society and Committee of arrangement, certainly manifested great taste in the distribution of the articles so liberally poured in upon them. The lower room was occupied with numerous bouquets and tasteful designs formed of cut flowers, some of which, reaching to the ceiling at a height of 21 feet, were in size well adapted to the spaciousness of the saloon. The fountain too, which was playing in the centre, not only seemed appropriate to the general character of the exhibition, but pleased the ear with its murmuring, and gave health and pleasantness and freshness to an atmosphere which might otherwise have been rather too confined. Tables up the centre and whole length of the sides, were filled with flowers and plants of all descriptions, and natives of all climes. Ample space and opportunity were afforded for the *amateur* to exhibit from his green-house specimens of his success, and thus indulge his liberality of feeling, by throwing open to general inspection and enjoyment, the rare and curious plants which all are pleased to examine, and which but few can cultivate for themselves.

In the upper room, more extensive still than the lower, the display of fruits and vegetables was really very fine. The latter, we thought, had never been exceeded; such melons, such beets, such pumpkins, &c., every one would take a pride in raising. It is, as we all know, a general fruit season, and it would seem in almost all the samples before us, as if nature had done her best. Finer grapes in appearance, have perhaps been shown in previous years, but never in greater variety. Indeed it may be said, the fruit had but one solitary failing—it was *forbidden*.

There was ample room for the distribution of premiums, and we have been glad to observe they were spread far and wide around the city. Our Jersey friends were well in the field, and contributed their full share to the richness of the show. However they may be charged with hailing from the land of pine knots and blowing sand, they can proudly point to their products of the field, the garden and the orchard, and say, *beat us if you can*.

Something short of $2,500 were taken at the door, and from twelve to fifteen thousand persons visited the rooms. During a part of the second evening, we concluded there could scarcely be fewer than 3500 persons in attendance: in the upper saloon alone, it was estimated that 2500 were crowded at once. To view them from the galleries above, was a beautiful spectacle, and to the editor, one of no ordinary interest. The youth, and the beauty, and the animation, and the hope of the city and country, were floating below; and though, as we leaned over the railing and contemplated the crowd, we could not but acknowledge the question asked by a friend at our side—"where will all these be fifty years hence?"—was both natural and full of meaning;—and though we could scarcely restrain a tear, kindred to that which Xerxes dropped at Abydos, when the reflection was forced upon him, that the days were numbered of all the mighty host before him—yet the hope and the elasticity of feeling which every surrounding object was calculated to inspire, expelled the threatening *shade*, and as we withdrew the eye from the moving thousands beneath, and the abundant proofs presented on every hand, of nature's exuberant bounty and loveliness, the exclamation of the dying girl was remembered, "what a beautiful world is this we live in!"

During a part of the last evening, the audience was rather taken by surprise, by an exhibition of skill in music. The question was asked by several whom we met—is this appropriate to a horticultural exhibition? is it not rather foreign to the purpose? will it not deter many from the rooms? and if it should draw any thither, will they not be of a class different from that select one, which no doubt the Society wishes to see on its floors? The objects the Society has in view in these annual displays, are, we apprehend, to incite by competition, to a multiplication of the comforts of life—to diffuse a taste for the elegancies of the green-house and the garden; and to afford to an intelligent and well cultivated public, a chaste and unexceptionable amusement, in which all can freely, and without hesitation, participate.

It is stated, and no doubt truly, that on the 7th ult., the locomotive *United States*, built by Baldwin & Whitney of this city, brought from Pottsville to Richmond, the depot of the Reading rail-road, on the Delaware, a little above Kensington, a train of one hundred and fifty cars, containing five hundred and sixty-four tons of coal. The cars themselves, weighed three hundred and forty tons: total weight, nine hundred and four tons. This is probably the greatest performance ever made by a locomotive, either in this country or Europe.

On pages 63 and 382, of last volume, references will be found to the *Etrurian* wheat, introduced by Commodore Stewart, of Bordentown, N. J. H. M. Zollickoffer, of this city, left at the office two or three weeks since, a beautiful sample of this wheat, grown by his brother Daniel, of Carroll co., Maryland. It is a white variety, said to be *fly* proof, and scarcely subject to *rust*.

We have just learned that the ploughing match of the Newcastle County Agricultural Society will take place in a field near Brandywine Village, on the 18th inst. The rules to be observed in the match, and the list of premiums will be made known on the ground.

The Bucks County Agricultural Society will hold its Exhibition and Cattle Show on the 24th inst. They had made arrangements to hold it on the 17th, but it was postponed on account of our own commencing on that day.

The exhibition of our Agricultural Society is now at hand. To-morrow and the day following, will be lively days at the *Rising Sun*. On the 18th will be the trial of ploughs.

Attention is invited to the communication of C. J. Fell & Brother, on page 100, in relation to Mustard—*sinapis nigra*. A crop that will yield upwards of $70 an acre, is certainly worth inquiring into; especially where wheat is precarious and expensive, and where new articles of culture are felt to be wanting. The Mustard plant is said to flourish best in a fine rich mould, that is not easily affected by the drought, and which rather inclines to lightness than tenacity. It requires to be carefully tended, the ground being kept mellow, and entirely free from weeds. We are informed that the American seed is generally superior to the foreign. The sample left with us is remarkably fine and plump

C. J. Fell & Brother, will reserve a few barrels uncrushed, in order to supply those who may be disposed to try the experiment of growing it next spring.

Our friends of Burlington, had on the 25th and 26th of last month, an animated time in the Annual Exhibition of the New Jersey Horticultural Society. Many persons, both their own citizens and strangers, visited the Lyceum, and greatly admired the taste displayed in the arrangements. The fruit, vegetables and flowers, were pronounced very fine, and many rare plants gave increased interest to the room. New Jersey has long been known for the superiority of many of the articles which make up an exhibition of this kind: and we have no doubt of the truth of all we hear in relation to her having done herself credit, on the late occasion.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$4 00
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	60
Complete sets of the FARMERS' CABINET, half-bound, 8 vols.	6 50
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SKINNER'S CATTLE DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
JOHNSTON'S Agricultural Chemistry,	2 25
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions will be received for Colman's Agricultural Tour in England and on the Continent.

☞ We are prepared to bind books to order.

The quantity of rain which fell during the Ninth month, (September,) 1844, was a little more than four inches. ..... 4.03 inches.

Penn. Hospital, 10th mo., 1st.

The Corresponding Secretary of the Philadelphia Society for promoting Agriculture, informs us that at the monthly meeting held on the 2nd inst., upon the suggestion of S. C. Ford, a committee was appointed to inquire into and collect facts, as to the disease which has attacked the potatoe in different parts of the country. The committee consists of S. C. Ford, James Gowen, Dr. Elwyn, and —— Kennedy. They have agreed upon the following questions:

What variety of the potatoe seems most exposed to the disease?

What was the mode of cultivation?

Had the seed been lately changed?

What was the character of the soil?

What was the nature of the season?

As this is a subject of deep general interest, as well as to those more particularly engaged in agriculture, it is very desirable that as thorough an investigation as possible should be made, and as great a number of facts collected, as will serve to give some idea of the cause of this disease. It is always difficult to examine matters whose operations depend on some obscure action of nature: but as to collect and collate facts is the only possible mode of getting a remote idea of a cause, it is hoped that sufficient interest will be shown to lead all who have it in their power, to examine and make known their investigation. Communications may be addressed to the editor of the Farmers' Cabinet, or to any one of the Committee. Will the Eastern Agricultural papers be pleased to notice the above subject of inquiry, as well as the appointment of the Committee?

We had the pleasure of attending the Fall Exhibition of the Agricultural Society of Newcastle co., Del., on the 11th ult. In a vacant square east of the town, we found ourselves in the midst of interested groups of spectators, all enjoying the fine appearance of lots of cattle, horses, pigs, sheep, &c., that did credit to the county. The working oxen were noble fellows, looking as if they lived on the fat of the land, and showing by their good training, that they were willing to earn their *bread*. The lower room of the Town Hall was occupied by the Horticultural Society—and when we say that its arrangements were planned and carried out by the skill and taste of the Wilmington fair, we have conclusively settled it that all was well done. The articles exhibited, were in themselves such as it would give any one pleasure to assist in arranging. In the upper room were shown numerous manufactured articles of excellent workmanship, admirably sustaining the high reputation of Newcastle county as a manufacturing district. The plain substantial dinner at Hall's, was every way suited to the occasion, and full justice was done to it in its *discussion*. Dr. Thomson, president of the Agricultural Society, presided on the occasion, and was assisted by Chauncey P. Holcomb, one of the vice presidents. They had around them at either end of the table, numerous invited guests; among whom were Dr. Mease, J. S. Skinner, the orator of the day, Dr. Darlington, Peter A. Browne, M. B. Bateham, of the New Genesee Farmer, &c. The Address was such as would be looked for from such a man—practical, with the useful kept steadily in view. We shall hereafter be able to lay it before our readers. A copy has not yet come to hand.

Cattle Sale at Rising-Sun Village.

The sale of James Gowen's cattle on the 26th of last month, was, we are sorry to say, not as successful as was to be expected. The many superior animals offered, and the reputation of the owner as a breeder of fine stock, led us to anticipate a large company, and much competition among the enterprising agriculturists of the country, for the fine cattle brought out on the occasion. But when we reflect upon the absorbing interest that pervades all classes, at this advanced stage of the pending elections, and the great drought, which on the part of many, forbid the idea of increasing their stocks, while they can barely support those already on hand, we can in some measure account for the paucity of bidders at this sale; besides, the appearance of the weather the day previous, was of itself, sufficient to keep many back, who otherwise might have attended from a dstance.

The owner was not disposed to submit to the prices offered, and he accordingly stopped the sale, stating at the same time, that his object was to sell the cattle at fair and reasonable prices, and if any persons wished to treat with him, for any animal on the catalogue, he was ready to receive their offers. In this way, as we understand, some sales were made, and the residue held in like manner, at private sale. Those, therefore, who could not attend the public sale, may still have an opportunity of procuring some of this fine stock, by applying to the owner at Philadelphia, or Mount Airy. They will also be offered again at public sale this week, at the time of the Agricultural Exhibition.

The Cultivator gives a wholesome hint to its readers,—which will just as well apply to our own—not to suffer their horse-rake, hand-rakes, wagon rack, and whatever else may have been used in the hay harvest recently finished, to lay out in the fields exposed to the weather, but to have them carefully housed, to be ready and in good order for another season. This care is certainly cheaper than to buy new tools. The admonition may be properly extended to the care of ploughs, harrows, and all the farmer's other implements which are not needed through the winter. Great loss is sustained by many in suffering these things to remain out of doors. The winter's exposure is often more injurious than the summer's service.

Edward Harris, of Moorestown, N. J., advertises his stock of Norman horses for sale. A cut of his imported Diligence, with a desc iption of him, may be seen page 281, Vol. VI. Farmers' Cabinet.

The bottle of Tomato catsup from a fair friend, with the note accompanying it, came duly to hand. Both are *highly seasoned*. While the *spice* of the one is relished at the family board, that of the other will be excused under the plea of a too partial friendship. There is good logic however in the argument, that the man who labours for the general good, should not himself be shut out from the general benefit.

In answer to the frequent inquiries which are made for Colman's *Agricultural Tour*, we may say that the second number, as we are advised, is now in press by his publisher in Boston, and may shortly be looked for.

Two months ago, we adverted to the great profusion of apples to be found in all our orchards throughout this district of country, and urged upon our readers to ensure to themselves and for a market, plenty of *good vinegar*. Reference is again made to the subject, because it is deemed well worthy of another paragraph. Let every farmer remember that he can place on his table no substitute for good cider vinegar, that can at all be compared with it. The trash we buy may have virtue enough to pucker the mouth and distort a placid countenance into a sour one, but the sound substantial article which the mower will relish on his pork and cabbage, and which the housewife will be pleased to have in her pickle jars, is only to be obtained from well managed, unadulterated cider. The days for whiskey making, we trust, are pretty much gone by, but good vinegar is perhaps not less saleable, or less profitable; and with proper care there need be no difficulty in always having the first-rate article. See page 39, current volume of the Cabinet.

The Highland Agricultural Society held its annual meeting at Glasgow, in the Eighth month last. The Duke of Sutherland sent some of his West Highland cattle to it from a distance of 350 miles; and a pair of oxen of this breed belonging to A. Sterling, took the first premium, as superior to any others of any breed. Several hundred cattle were on the ground, and not fewer than 150 horses. The sale of tickets for admission, brought in about £1,500.

Professor Emmons, of Albany, and Dr. Prime, of Newburgh, propose the publication of an *American Quarterly Journal of Agriculture and Science*. "It will contain original Essays, both scientific and practical, on the various branches of husbandry—animal and vegetable physiology—chemistry—botany—geology, and all the branches of science connected with farming—notices and reviews of agricultural and scientific works—agricultural news, both foreign and domestic—details of accurately conducted experiments and their results, and all discoveries in science or art, which offer advantages to the farmer." We have heard this announcement with pleasure. A work of the kind, conducted with ability and candor, cannot fail to promote essentially the great agricultural interests of the country. Professor Emmons is favourably known by his labours in the geological corps of the State of New York, and we trust the editors may have no difficulty in drawing to their aid an amount of talent and industry that shall give to our *Agricultural Quarterly*, a high standing among those of similar purpose in other countries. We are an agricultural people, and upon the successful prosecution of this leading branch of our pursuits, must depend the steady advancement of national prosperity. We have Liebig for authority, that "perfect agriculture is the true foundation of all trade and industry."

☞ SHORT ADVERTISEMENTS, ☜

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line.

PHILADELPHIA SEED STORE,

No. 23 MARKET STREET.

M. S. Powell keeps a constant supply of Clover and other Grass Seeds. Field Seeds, consisting of prime Seed wheat, Buckwheat, Millet, Oats, Corn, Rye, &c.

☞ GARDEN AND BIRD SEEDS generally.

July 15th, 1844. tf.

PHILADELPHIA AGRICULTURAL, HORTICULTURAL, AND SEED WAREHOUSE.

No. 194½ Market street, between Fifth and Sixth streets, South side.

For sale as above, at wholesale and retail, a complete assortment of Farming tools, among which may be found *Horse-powers and Threshing Machines, Grain and Seed Fans* of various patterns. *Corn-shellers* in variety. Hay, Straw, and Corn-stalk Cutters, eight different patterns, from $4 50 to $30. Corn-stalk Cutters and Grinders—Churns—Cheese-presses, &c. *Centre-draught Ploughs* f eight sizes. Bill-hooks—Bramble Scythes—Grubbing Hoes—Axes and handles—Hatchets—Potatoe Hooks—complete sets of instruments for making capons.

Garden, Grass, Flower and *Field seeds*, warranted fresh and true to name. D. O. Prouty.

POUDRETTE—a valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, N. Fourth street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels—$5 for three barrels—$15 for ten barrels, or thirty cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. Farmers to the South, and in the interior, both of this State and New Jersey, are invited to try the article. As a manure for turnips, buckwheat, &c., it has been used to great advantage. The season for applying it to the wheat crop, is now at hand. Those who contemplate using it this fall, would do well to secure it early. Josiah Tatum.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE.

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay. AARON CLEMENT.

Sept. 5th, 1844.

☞ A FARM FOR SALE, CHEAP.

Situated in Newcastle county, Delaware, nine miles west of Delaware City, in a healthy and rapidly improving neighbourhood, and convenient to a landing on the canal. It contains about 109 acres. For further particulars inquire in Philadelphia, Parrish street, third door below Seventh street.

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